1907 (9)

A Rational Dietary for Infants.

This series of Foods has been designed to supply for the first time a need in the rational dietary of infants fed by hand. None of the substitutes for mother's milk have hitherto been physiologically accurate. Especially is this so with the diluted cow's milk given usually in the earlier days of infant life.

The following table enables one to appreciate the difference between—

COW'S MILK—as sold in Towns. Reaction.	Acid
Specific gravity	1·031
Water	87·0
Fat	3·5
Casein	3·0
Albumin	0·5
Milk Sugar	4·5
Bacteria	very numerous

HUMAN MILK—direct from Breast. Reaction.	Alkaline
Specific gravity	1·027
Water	87·5
Fat	3·8
Casein	1·0
Albumin	1·2
Milk Sugar	6·2
Bacteria	absent

Thus cow's milk contains an excess of casein which curdles in the infant's stomach, and a deficiency in soluble albumen and sugar. Condensed milk, on the other hand, contains an excess of sugar, but a decided deficiency in fat and soluble albumen, and a slight deficiency in casein. We have therefore endeavoured successfully to produce two complete Foods which are, physiologically, practically the same as the mother's milk. These are

"First Food" for Infants,

which is prepared in the form of a powder, is made from fresh cow's milk, from which, after the proximate composition has been ascertained, the excess of casein is removed, and the deficiency in fat, soluble albumen, and milk sugar corrected. The method of preparation renders this food sterile, and boiled water alone is required in preparing it for use.

Infants reared by hand should be brought up on this food until they are three months old.

If the child be strong and able to assimilate the food, it is advisable to now begin using

"Second Food" for Infants.

(MOTHER'S MILK FOOD.)

This food, to meet the increasing requirements of the digestive apparatus, contains, besides the constituents of "First Food," maltose, with a small proportion of dextrine, together with soluble phosphates derived from whole meal. There is, however, no unconverted starch left in the food which at this age the infant would be unable to digest.

Experience has shown conclusively that after five or six months the infant can be most advantageously reared on

Allen & Hanburys' "Malted Food."

This has been manufactured by us for many years after the formula of LIEBIG, but by improved methods. The basis of the food is fine wheaten flour rich in nitrogen, with this advantage, that a large proportion, but not all the starch, is converted by the action of Malt Extract. The proportions are so arranged that the infant economy is not paralysed, as with some foods, by having everything digested for it, while on the other hand it is not given too much starch to digest. This food can be most successfully given when the mother's milk is beginning to fail both in quantity and richness, without the child being actually weaned. In this way a gradual transition can be effected from the natural to the full use of the artificial food.

It has been found already that this series of desiccated foods have proved invaluable on board ship, especially in the case when children have to be taken at an early age to India. It is found that owing to their careful preparation the foods keep well in hot climates, and the infant is shielded from the risk of bacterial infections by polluted milk. All risk is removed if only the water used be sterilised by well boiling.

PAMPHLET WITH TESTIMONIALS ON APPLICATION.

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See also pages iv, v, vi, vii.

"ONE OF THE MOST POPULAR TONICS OF THE DAY."
(British Medical Journal.")

Byno=Hypophosphites

A great advance on the ordinary (Sugar) Syrups of the Hypophosphites.

COMPOSITION.

The Vehicle is Bynin, our Liquid Extract of Malt, so prepared that the entire activity of the digestive diastatic ferment is preserved.

The active ingredients consist of a neutral solution of the Hypophosphites of Iron, Manganese, Calcium and Potassium, together with the Alkaloids of Nux Vomica and Cinchona.

These latter are present in the form in which they occur in the natural state, combined with vegetable acids. Unlike many galenical preparations, however, the quantity of each alkaloid present is a fixed one—that of Strychnine being $\frac{1}{10}$ grain to each ounce of the mixture.

THERAPEUTIC ADVANTAGES OF BYNO-HYPOPHOSPHITES are briefly:

(1) The employment of sugar, usual in most preparations of Hypophosphites, is avoided, and a potent cause of dyspepsia eliminated by the substitution of Malt Extract. This is capable of digesting and aiding the digestion of a considerable amount of starchy food.

(2) The Alkaloids of Nux Vomica, especially Strychnine, are perhaps the most valuable gastric tonics in common use, while those of Cinchona possess properties essential in the treatment of functional nervous disorders and febrile conditions. Given in combination with their natural acids, experience has long shewn that they are not only more easily tolerated, but more readily assimilated.

(3) The presence of Iron and Calcium in this preparation indicates its value as a direct hæmopoietic agent.

The Hypophosphites, taken as a group, are invaluable restoratives in cases of brain fatigue and nervous exhaustion. It is a matter of clinical observation that Phosphorus, essential in the production of the lecithin compounds of the nervous system, is far more readily assimilated in the form of Hypophosphites than as Phosphates, Phosphoric Acid, or even free Phosphorus.

"In Phthisis Hypophosphites are indicated for the following reasons:—
"They increase appetite and digestion, promote the formation of the blood, lessen cough
"and expectoration; they appear to be more useful in the earlier stages of the disease, and
"are said to be more successful with young than with old people. They are recommended
"in nervous and general debility, teething, spermatorrhœa, chlorosis, and anæmia."—
(RINGER).

BYNO-HYPOPHOSPHITES is a clear amber-coloured liquid of a slightly bitter but agreeable taste. It unites readily with water, and may be administered with safety to children.

Byno-Hypophosphites is put up in capsuled bottles at 2/6 and 4/6, and sold by Chemists everywhere.

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Depot for AUSTRALIA—484, COLLINS STREET, MELBOURNE.
See also pages iii, v, vi. viii.

"The maintenance of Nutrition is the KEYNOTE of the successful treatment of Phthisis."—*The Lancet.*

Bynol. "The Perfected" Malt & Oil.

PHYSIOLOGY.

This can be best considered by taking separately its two constituents:—

1. The Malt Extract used contains an amylolytic ferment called diastase, of the fullest activity. Its special function of converting starchy foods into a soluble sugar which can be easily absorbed renders this preparation at once invaluable for aiding assimilation. In weakly and cachectic conditions the activity of the natural allied ferment ptyaline becomes greatly deficient, with the consequence that much ingested material is never digested. The Malt Extract being semi-fluid, and possessing a characteristic sweet taste, is therefore physically a very convenient vehicle for emulsifying and disguising the slight taste of the other constituent—Cod Liver Oil.

2. The physiological properties and fate of the latter body are complex; its equivalent in heat-units as regards the animal body is at least two-and-a-half times that of Meat Extract (Liebig); that is to say, it is at least two-and-a-half times as valuable as Meat Extract in maintaining the body weight. Long use has shown that, in atrophic conditions of the absorbing mechanism of the bowel, Cod Liver Oil is not only more easily emulsified, but more easily taken up by the villi of the small intestines and passed on to the lacteals.

In the "Perfected" Cod Liver Oil, where the formation of certain oxidation products irritating to the stomach is avoided, we have perhaps the ideal form of fat-food. Milk, cream, &c., are liable to produce butyric and other allied fatty acids, of little use except to irritate the gastric and intestinal mucous membrane.

To more perfectly understand the part played by Cod Liver Oil, the digestion of fat-foods is roughly as follows:—In the stomach slightly, but chiefly in the duodenum, by the action of the pancreatic ferment, fats are—

1. Emulsified, that is, broken up into minute oil globules, each surrounded by what is known as a haptogen membrane. In this physical state absorption is possible by the villi, the oils being unaltered.

2. Saponified, that is, split into fatty acids and glycerine, both capable of absorption by the intestine.

THERAPEUTICS.

The above considerations enable us to understand more clearly the immense use Malt Extract and Cod Liver Oil, especially in combination, have in wasting diseases.

In Phthisis, for example, the digestive ferments are of lowered activity, and the introduction of a modicum of artificial ferment not only increases the actual amount of food assimilated, but the power of the enfeebled ferments to assimilate.

The almost constant rise of temperature above the normal is maintained chiefly at the expense of the fatty constituents of the body; hence the wasting. This, experience has shown, can best (putting aside questions of hygiene) be combatted by increasing considerably the amount of fat-food and carbohydrate food.

When absorbed, the part played by fat-food is practically two-fold:—

1. It becomes the source from which the surplus fat stored up in various parts of the body may be replenished.

2. Fat-food is one of the chief sources of animal heat, as shown above.

As we have seen, the Cod Liver Oil is the best of the class of fat-foods, especially in an enfeebled condition, and, combined with Malt Extract, as in Bynol, further assists the assimilation of the extra carbohydrate ingested.

That what is physiologically is also clinically true cannot be better illustrated than in the remarks made by the late Sir ANDREW CLARK in a lecture at the London Hospital:—

"*I have said that these fibroid cases are poor creatures, thin and white, and have what may be called nutritive debility, and the question is, What am I to do with them? You cannot do better than endeavour to make the patient walk in the way of physiological righteousness. But that sometimes will not do. Some people may be physiologically well behaved, and somehow they do not thrive on it. Can you do anything in those cases? There are two remedies which sometimes do succeed where the ordinary diet will not succeed in nourishing the patient—the one is Cod Liver Oil and Malt given with food—a preparation called Bynol—and the other is the remedy called Bynin Emulsion, consisting of Hypophosphites, Oil, and Malt; both are prepared by Messrs. ALLEN & HANBURYS. These are two good nutritive agents in promoting nutrition.*"

"A perfect combination of Malt Extract and Cod Liver Oil."—*The British Medical Journal.*

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Depot for AUSTRALIA—484, COLLINS STREET, MELBOURNE.

See also pages iii, iv, vi, vii.

Medicated Throat Pastilles,

Manufactured by ALLEN & HANBURYS Ltd.

THE increased knowledge of the local treatment of the various morbid conditions of the Throat necessitates nowadays the employment of a greater variety of drugs, and in a more palatable and demulcent form than the lozenges in common use. These Pastilles have been in use many years, and the following list is a result of the experience of many practitioners.

For the convenience of the Medical Profession the Pastilles may be conveniently grouped under the following headings:—

For Ordinary Relaxed Throat.

No. 11—Chlorate of Potash, 1 grain in each.
,, 32—Red Gum and Chlorate of Potash (Gum: Rubr: gr: ii, Pot: Chlor: gr: i.).
,, 14—Tannin, 1 grain.
,, 29—Rhatany and Cocaine (Ext: Kramer: gr: ii. Cocain: gr: 1-10th).

For Overstrain of Throat involving Relaxation.

No. 38—Chlorate of Potash, Borax and Cocaine (Pot: Chlor: et Boracis āā. gr: i. Cocain: gr: 1-20th).
,, 47—Alum and Tannin (āā. gr: i.).

These are also useful in relieving granular pharyngitis (Clergymen's Sore Throat). For the removal of the Tenacious Mucus, Ammon: Chloride Pastilles are indicated.

For Irritable Relaxed Throat with Elongated Uvula.

No. 29—Rhatany and Cocaine (Ext: Kramer: gr: ii, Cocain: gr: 1-10th).
,, 31—Red Gum and Cocaine (Gum: Rubr: gr: ii, Cocain: gr: 1-20th.
,, 24—Cocaine, 1-10th and 1-20th grain.
,, 16—Bromide of Ammonium.

For Sore Throat of Influenza and Fever.

No. 6—Aconite. Each Pastille equals ½ minim of B P. Tincture.
,, 2—Ipecacuanha, ¼ grain.

Both are useful for the Feverish Colds of Children.

For Sore Throats & Tracheitis, Influenza Cold.

No. 43—Menthol, 1-10th and 1-20th grain.
,, 19—Chloride of Ammonium, 2 grains. Stimulant Expectorant.
,, 4—Compound Morphia and Ipecacuanha (Morphinæ. gr: 1-40th: Ipecacuanhæ, gr: 1-5th; Scillæ, gr: 1-5th).
,, 45—Menthol and Rhatany (Menthol, gr: 1-20th; Ext: Kramer: gr: ii.).

For Acute Tonsillitis and Diphtheritic Throat.

No. 44—Menthol and Cocaine (āā. gr: 1-20th).
,, 46—Menthol and Bromide of Ammon. (Menthol, gr: 1-20th; Ammon. Bromidi, gr: i.).
,, 15—Carbolic Acid. ⅛ grain.
,, 41—Eucalyptus Oil.
,, 30—Boracic Acid, 1 grain.
,, 5—Opium and Belladonna. Equals the Lozenges of the B.P.

Compound Guaiacum, Guaiacum, Potash Chlorate, and Red Gum may be used with advantage in stages of recovery or Chronic Enlarged Tonsils.

For Acute Pharyngitis, Acute Inflammation of Pharynx.

AS ADJUVANT USE.

No. 5—Opium and Belladonna. Equals the Lozenges of the B.P.
,, 6—Aconite. Equals ½ minim of Tincture, B.P.
,, 24—Cocaine, 1-10th and 1-20th grain.

During recovery, use ASTRINGENT PASTILLES.

For Irritable Throat of Phthisis, Laryngeal Phthisis.

No. 1—Morphia, 1-40th grain.
,, 26—Codeine, ⅛th grain.
,, 34—Terebene, 2 minims.
,, 35—Pumilio Pine, 1 minim.

For Ulcerated Conditions of Mouth, Tongue, Gum Boils.

No. 17—Chlorate of Potash and Borax, āā. gr: i.
,, 30—Boric Acid, 1 grain.
,, 15—Carbolic Acid, ⅛ grain.

☛ *In ordering these Pastilles numbers may be quoted for convenience.*

These Pastilles are supplied in 1-lb. bottles, and in boxes containing 3 oz.

Allen & Hanburys Ltd., LONDON.

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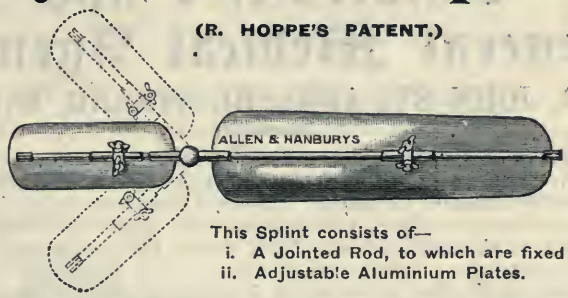
See also pages iii, iv, v, vii.

THE NEW UNIVERSAL
Adjustable Splint

(R. HOPPE'S PATENT.)



This Splint consists of—

i. A Jointed Rod, to which are fixed
ii. Adjustable Aluminium Plates.

The rods can be set at any required angle, and the plates in the position suitable to hold the limb. Being made of aluminium, the latter are as light as a wooden splint, while the mechanical adjustment permits of the splint being accurately adjusted to the correct position of the limb, instead of the limb to the shape of the splint. Aluminium presents a further advantage in that skiagraphs may be made of the limb when in position, and by means of the fluoroscope the correct apposition of the broken ends, in a case of fracture, is ensured. Instead of the aluminium plates, any ordinary wooden or poroplastic splints can be attached to the rods, if required. Hand-pieces in metal, poroplastic felt, and other especial addenda, with connection rods, extension screw, &c., can be supplied for particular needs.

Owing to the fact that the mechanism of the rod hinge is separate from that of the plates, passive movement of a joint can be carried out without removing the splint, merely by unlocking the hinge movement. This is of great advantage in safely carrying out the now recognised treatment of certain cases of fracture, by early passive movement.

Being a combination of all splints, it will prove invaluable for field purposes and country practice. It is light, easily carried, and will answer for all fractures of the limbs. One of the many advantages which this splint possesses over all other angular, anterior, posterior, or lateral splints, is the facility with which the forearm can be fixed at any desired position of pronation or supination. Besides this, the practical advantages of this splint in its application are its readiness for use either as an anterior or a posterior, outside or inside splint for either arm, and of its being adjustable to a long or a short arm. With regard to the leg, the splint has been designed to suit every kind of fracture, and every position required in the treatment of joint disease.

The fact that this patent has a very large sale in America, and has been adopted by the U.S.A. War Department is alone sufficient testimony to its practical and economical utility.

The Splint is made in two sizes, Adults' and Children's, 21/- each.

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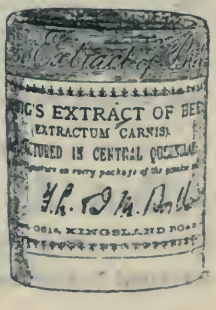


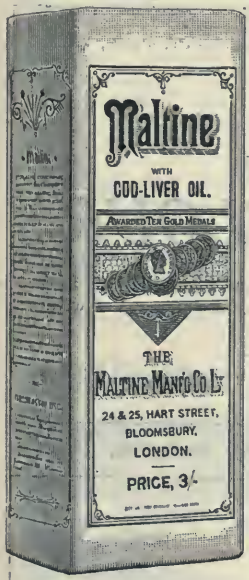
Points about MALTINE with Cod-Liver Oil

IT IS THOROUGHLY PALATABLE.

The delicate flavour of "Maltine" admirably adapts it for a menstruum for Cod-Liver Oil, and "Maltine" with Cod-Liver Oil is tolerated with ease by the most fastidious.

IT IS READILY ASSIMILABLE.

The oil in "Maltine" with Cod-Liver Oil is most minutely broken up, the division being far finer than that of the fat in milk. The combination being effected by mechanical means, is not disintegrated by acid, as is the case with emulsions. Maltine with Cod-Liver Oil has been proved by clinical experience to be the most easily digested of all Cod-Liver Oil preparations.



IT IS HIGHLY NUTRITIVE.

In "Maltine" we have a powerful agent for the conversion of farinaceous food into soluble form, also a food rich in carbohydrates, proteids and phosphates in most assimilable form. These principles, together with Cod-Liver Oil deprived of all its disadvantages, render Maltine with Cod-Liver Oil a most successful reconstructive agent, and explain its long and extensive employment by the Medical Profession.

The British Medical Journal reports:—"The therapeutic value has been so thoroughly recognised and is so well known. . . Patients unable to tolerate the purest and most carefully prepared Cod-Liver Oil can readily digest and assimilate it when combined with 'MALTINE.'"

The word "MALTINE" is our Registered Trade Mark. In prescribing kindly specify "MALTINE COMPANY."

We shall be pleased to send Samples free of charge to Medical Men.

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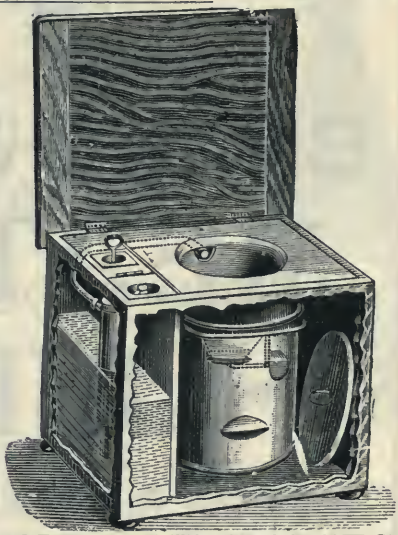

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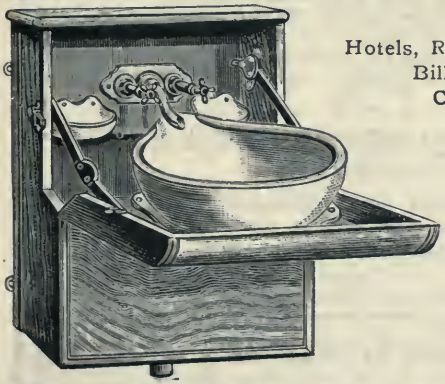

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BATTLEY'S SOLUTION OF OPIUM.

LIQUOR OPII SEDATIVUS (BATTLEY).

Strength—Twice that of Tinctura Opii B.P.

Battley's Solution of Opium may be given with the greatest of safety in those cases where an opiate is required or indicated, and from its great purity, absence of all hurtful matter, such as narceine and resinous bodies, is admissible when all other preparations would prove hurtful.

Liquor Opii Sedativus (Battley) having now existed for nearly 100 years, and after being opposed by vain and worthless opponents has upheld its old position as "Second to None" in the Hypnotic World.

Battley's Solution of Opium has none of the disagreeable after-effects that most soporifics and hypnotics have, no nauseating or depressing influences with racking headaches, etc., but exercises a quieting and benign sway over the patient, giving him or her a refreshing sleep with freedom from pain. The last few years it has come to the front in cases of Cancer and Sarcoma, having been used widely both in private and hospital practice with great ease and comfort in these instances.

Battley's Solution of Opium never varies in strength.

Battley's Solution of Opium does not leave behind it any unpleasant effects.

Battley's Solution of Opium is now in use throughout the United Kingdom; throughout the Continent (France excepted); the Colonies, and largely in America, both South and North; and we ask all those who have not tried Battley's Solution of Opium to send for Samples (Free).

The "Medical Annual," speaking of Opium says: **"Battley's Solution of Opium** is a common word in the Practitioner's vocabulary. It has gained its reputation by its intrinsic value as a remedy which contains all that is sedative and anodyne in opium without its resinous constituents which are, therapeutically speaking, impurities."

The "Lancet," speaking of Opium, says: "New Hypnotics come and go, each with hopeful forecast of being superior to those already known, each in turn aspiring to give **peaceful refreshing sleep,** which shall be followed by no **unpleasant after-effects;** and yet, in the minds of many thoughtful practitioners, opium and its preparations still maintain their ground." We would point out to the Medical Profession that Battley's Solution of Opium has for the past eighty years answered these **three** most important requirements, and stands out above all other hypnotics in excellence.

LIQUOR OPII SEDATIVUS.

The striking appearance resulting from the evaporation of Battley's Sedative (*Plate III. Fig.* 1) first drew our attention to the mode of investigation now described. We have examined it frequently, and always have met with the same characters. The slides present an almost opaque mass of crystals of morphine salts and codeine, with a very small portion of narcotine (and meconic acid ?), and so far as we have observed, complete absence of resinous matter and narceine. **Any one who has studied the microscopic characters of this preparation will readily understand how it has kept its place with the Profession in spite of the cheap imitations which have been so largely puffed as substitutes for it.** Though we have experimented much with a view to preparing a similar liquor, we have not yet arrived at an identical result.

We do not guarantee our Preparations unless in original bottles, with the autograph of RICHARD BATTLEY over each cork and on the label, *without which none is genuine.*

A HEALTH-GIVING TABLE WATER

And one of the Most Remarkable Curative Remedies of the time is

PITKEATHLY CUM

LITHIÂ WATER

WHICH HAS WON A WIDE REPUTE AS AN

INVALUABLE REMEDY FOR GOUT, RHEUMATISM, SCIATICA AND LUMBAGO.

IT IS ALSO GOOD IN

Congestion of the Liver and Kidneys.

For ACIDITY, INDIGESTION, and MORNING SICKNESS, with Coated Tongue; while as a TONIC DRINK it is refreshing, invigorating, and health restoring.

Two or three Half-Bottles may be taken daily, either alone or with a little Spirits, and before, with, or after meals.

Each Half-Bottle represents 5 grains of Carbonate of Lithiâ.

None genuine unless signed "REID & DONALD" across the label.

To be had in Quarts, Pints, and Split Bottles, at all the principal Hotels, Railway Refreshment Bars, Chemists, Grocers and Wine Merchants.

Wholesale:—INGRAM & ROYLE, London, Liverpool and Bristol, or direct Carriage Paid from the Sole Proprietors—

REID & DONALD, PERTH.

BOVRIL

Is the Vital Principle of PRIME OX BEEF obtained from selected Cattle reared in Australia and South America.

ANIMAL FOOD offers a means of strength and stimulus not furnished by any other aliment, and the perfect assimilation of nutritious food is an essential condition of perfect health, but the high-pressure life of the present age demands an effective stimulative nourishment, taking little time to prepare or consume, yet not detrimental to the digestive organs, hence the introduction of Meat Extracts, Meat Essences, &c.

But BARON LIEBIG, the great German chemist, discovered and publicly declared on November 11th, 1865, the unsuitableness of these preparations as resuscitating agents or as food in any direct sense. As he truly says:

"Were it possible to furnish the market at a reasonable price with a preparation of Meat combining in itself the albuminous, together with the extractive principles, such a preparation would have to be preferred to the Extractum Carnis, for it would contain *all* the nutritive constituents of Meat." Again, "I have before stated that in preparing the Extract of Meat the albuminous principles remain in the residue: they are lost to nutrition, and this is certainly a great disadvantage."

The Albumen and Fibrine are the only nourishing portions of the Beef, and they are not present in Meat Extracts, &c., which, therefore, are only stimulants and no more nourish the system than the poker feeds the fire.

BOVRIL supplies the nourishment so conspicuously absent in these preparations, and this is secured by the introduction of albumen and fibrine (or rather the entire lean of beef), desiccated at a low temperature by special process, and subsequently pulverised to a minute degree of subdivision. By this means the entire nourishment of animal food is adapted to the feeblest and most sensitive system, and perfect assimilation is secured with the least possible expenditure of vital energy.

INVALID BOVRIL

Is specially prepared for use in the sick room, and is put up in porcelain jars, obtainable from chemists and druggists only.

It contains the entire nutritive and stimulative constituents of Prime Ox Beef, and differs from ordinary Bovril in being more concentrated and quite devoid of seasoning, solving the great difficulty which all medical men recognise of furnishing substantial nourishment to the system through a debilitated stomach, nature being so effectively assisted that perfect digestion and assimilation is certain.

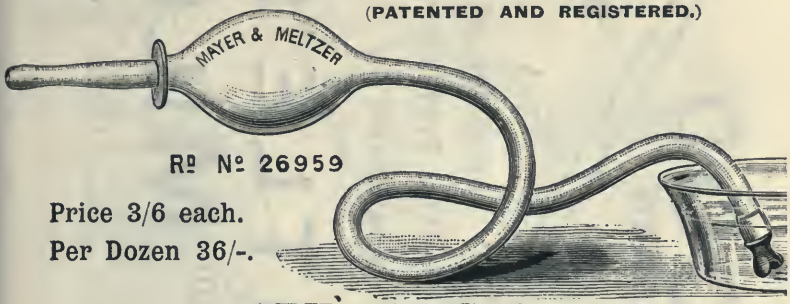
Strength to sustain the patient through the crisis of the illness, and strength to carry the invalid to a speedy convalescence and recovery is all important, and Bovril (which is not merely an Extract of Meat but Meat ITSELF), furnishes the system with renewed strength and increased vitality, being relished and retained when ordinary foods are rejected.

BOVRIL LIMITED, FOOD SPECIALISTS, LONDON.

Directors: { The Right Hon. LORD FLAYFAIR, G.C.B., LL.D., Dr. FARQUHARSON, M.P., and others.

M. & M. AUTO-ENEMA

(PATENTED AND REGISTERED.)



Rº Nº 26959

Price 3/6 each.

Per Dozen 36/-.

ADVANTAGES.

I.—It can be used with one hand; the bulb forms a handle by means of which the nozzle is introduced and held in position.

II.—Owing to the length of the efferent tube and the fixed position of the bulb during use, the end of the tube is unlikely to leave the vessel containing the liquid.

SOLE MANUFACTURERS:

MAYER & MELTZER { **71, GREAT PORTLAND ST., LONDON, W.**

HORLICK'S

Malted Milk

A PERFECT FOOD.

Requires No Cooking.
No Added Milk.

The most easily digested and most nutritious of foods, made from the purest fresh Cows' Milk, combined with Wheat and Barley Malt.

MAKES { **FLESH.** **BONE.** **BRAIN.**

FOR { **INFANTS.** **INVALIDS.** **CONVALESCENTS.**

Sample, free, on application—39, SNOW HILL, E.C.

NESTLÉ'S FOOD

An ENTIRE DIET for INFANTS, CHILDREN AND INVALIDS.

"Renders valuable assistance in Wasting Fever."

"Beneficial as a diet in severe cases of Typhoid."

"Invaluable in Cholera Infantum."

Pamphlet containing Extracts from Standard Medical Works in which the above Testimony is given sent free, with Sample Tin, on application to H. NESTLÉ, 9, Snow Hill, London, E.C.

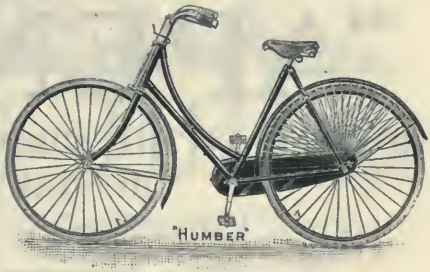
The attention of the Medical Profession is also drawn to

NESTLÉ'S SWISS (CONDENSED) MILK

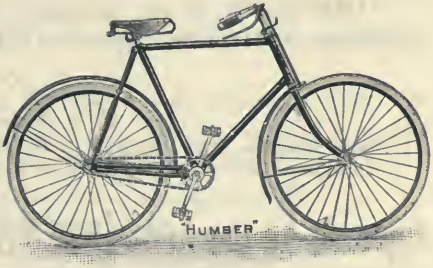
Which, through its RICHNESS in CREAM and UNIFORMITY of QUALITY, has obtained the Largest Sale in Great Britain. It can be used for all purposes of FRESH MILK.

Samples to Members of the Medical Profession only sent free on application to H. NESTLÉ, 9, Snow Hill, London, E.C.

See this Mark!!



LADIES'.



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Highest Grade Cycle

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UNEQUALLED WORKMANSHIP! . .
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Illustrated Catalogues with List of Agents in Principal Cities throughout the World, sent post free on application to—

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"APENTA"

THE BEST NATURAL APERIENT WATER

BOTTLED AT THE SPRINGS, BUDA PEST, HUNGARY,

UNDER EMINENT SCIENTIFIC CONTROL.

"We know of no stronger or more favourably constituted Natural Aperient Water."

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Royal Councillor, M.D., Professor of Chemistry and Director of the Royal Hungarian State Chemical Institute (Ministry of Agriculture), Buda Pest.

Approved by the ACADÉMIE DE MÉDECINE, PARIS.

"Apenta Water shows an excellent proportion of Sulphates and Chlorides."

"It is therefore a most useful Aperient."

"It contains an appreciable amount of lithium chloride, by which it is distinguished from all the other waters of this group."

"The presence of lithium in Apenta Water explains why a course of the latter is so useful in warding off attacks of gout, and in moderating their intensity when present."

JULIUS ALTHAUS, M.D., *Cons. Phys. to the Hospital of Epilepsy and Paralysis, Regent's Park.* ("British Medical Journal," *Sept. 26th*, 1896.)

OF ALL CHEMISTS & MINERAL WATER DEALERS.

Prices 6d., 1s., and 1s. 3d. per Bottle.

Analysis, Scientific Testimony, and Information, on application to—

The APOLLINARIS CO., Ltd., LONDON, W.

VITALIA MEAT JUICE.

21 % ALBUMIN.

VITALIA MEAT JUICE contains more flesh and bone forming material in each teaspoonful than any other fluid food.

VITALIA MEAT JUICE contains the necessary Salts of Iron and Phosphorus in the complex proteid combinations in which they exist in the tissues.

Medical Testimony.

THE LANCET.—"We have not examined a more powerful Meat 'expression' than 'VITALIA.' These results make evident its potent properties as a restorative, stimulant, and nutrient."

THE HOSPITAL.—"In conclusion we consider this a very useful preparation. Not only does analysis prove its food strength, but clinical observation bears this out in showing its sustaining value."

AN EMINENT GLASGOW PHYSICIAN WRITES:—"I am well satisfied with the preparation, and careful examination by myself demonstrates to my mind that of all the Meat Juices with which I am acquainted 'VITALIA' is the richest in albuminoid principles."

PRICES:

1/- *per 2-oz.;* 2/6 *per 6-oz.;* 4/6 *per 12-oz. bottle.*

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BAYER'S
Pharmaceutical Specialities.

TRIONAL. A most reliable and quickly-acting hypnotic of the Sulphonal group. Absolutely safe. No danger of habituation. Dose: 15 to 20 grains in a large cup of hot liquid.

TANNIGEN. An almost tasteless astringent. Most efficacious in Chronic, Acute and Summer Diarrhœas. Adult dose: 8 grains every three hours.

SALOPHEN. *Specific for Influenza*, Headache, Migraine, Acute Articular Rheumatism, Chorea, Sciatica. Dose: 15 grains four to six times daily.

ANALGEN. A derivative of Chinolin. Antipyretic and Analgesic. Useful in Gout and Muscular and Articular Rheumatism. A mild and safe medicine in the treatment of Malaria. A substitute for Quinine, wherever an intolerance for the latter exists. Dose for Adults: 25 to 30 grains. Best administered in milk.

SOMATOSE. A tasteless, odourless, nutrient meat powder, containing all the albuminoid principles of the meat in an easily soluble form. It has been extensively employed and found to be of the greatest service in Consumption, Diseases of the Stomach and intestinal tract, Chlorosis and Rickets. It is of great value in convalescence from all diseases. Somatose supplies all the protein matter required by the body. It strengthens the muscles and stimulates the appetite in a remarkable manner. Dose for Adults: A level teaspoonful in milk, gruel, coffee, &c.

LYCETOL. (Tartrate of Piperazine.) Anti-lithic, Uric Solvent. In the system Lycetol becomes converted into a carbonate, increasing greatly the alkalinity of the blood. It has a marked effect on the diuresis. Dose: 16 to 32 grains daily.

IODOTHYRINE. The active principle of the Thyroid Gland. It is most efficacious in Strumous Diseases, Myxœdema, Obesity, Rickets, Psoriasis, Eczema, and Uterine Hæmorrhages. Dose: 5 grains *two* to *eight* times a day for adults; 5 grains *one* to *three* times daily for children.

ARISTOL. An iodine cicatrisant which is an excellent odourless substitute for Iodoform, and highly recommended for Burns, Wounds, Scrofulous Ulcerations, Lupus, etc.

EUROPHEN. A perfect substitute for Iodoform. Odourless and non-toxic. Has a covering power five times greater than Iodoform. Especially useful in Ulcus Molle et dur.

LOSOPHAN. Particularly efficacious in the treatment of all kinds of Cutaneous Disorders caused by animal parasites. Its absolute freedom from odour makes it highly serviceable as a specific for Scabies, which is promptly removed by a 5 to 10% ointment or a 5% alcoholic solution.

Phenacetin-Bayer, Sulphonal-Bayer, Piperazine-Bayer, Salol-Bayer.

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ELBERFELD FARBENFABRIKEN CO. Ltd.

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Also at MANCHESTER, GLASGOW & BRADFORD.

THE PERFECT FOOD

Prepared from the Finest Grain.

Highly Recommended by the Medical Press,
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Prescribed by the Medical Profession.

TRITICINE is recommended by the Medical Faculty, as containing all the elements necessary in the constitution of a perfect Food; it also contains the albuminous or flesh-forming ingredients in an unusually large proportion, as well as all the properties which are necessary to form both bone and muscle.

A FOOD for the MOST DELICATELY CONSTITUTED.

Guaranteed to remain on the weakest of stomachs when all other Foods have failed. Makes delicious Puddings, and can be used with great advantage in place of Bread Crumbs for Browning, Frying Soles, &c. It is satisfying and easily digested, and is equally suited to the requirements of the young and old, the weak, and the strong.

TRITICINE LIMITED, Millers, CASTLEFORD,

And all Chemists & Grocers. Price 1/3 per Tin; Post Free 1/6.

WHOLESALE AGENTS.—**London**: BURGOYNE, BURBIDGES & CO., 16, Coleman Street, E.C. **Leeds**: TAYLOR'S DRUG STORES, Limited, and all Branches. **Glasgow**: THOS. McLAREN & SON, 27, St. Ann Street. **Birmingham**: CLEMENT DIX & CO., Midland Buildings, New Street. **Dublin**: ALEXANDER FINDLATER & CO., 30 & 31, Upper Sackville Street S. H. EAGER, 13, Carlingford Terrace, Drumcondra.

Digestive Products.

Since the successful researches of Dr. Fairchild brought the pancreatic digestive ferment within the range of practical medicine the name of the house he founded has always been associated with the production of reliable digestive enzymes. The general position of the 'Fairchild' Digestive Products is outlined in the *Lancet* of August 1st, 1896, which refers to "the deservedly well known and reliable digestive ferments of Messrs. Fairchild Bros. & Foster."

Coming to individual preparations the *British Medical Journal* says: "The introduction of the

Zymine Peptonising Tubes (Fairchild)

has probably done more than any other therapeutic measure of recent times to lessen infant mortality."

Foods peptonised by means of Zymine Peptonising Tubes, in accordance with the directions enclosed in each box, are sweet and palatable, easily assimilated and pre-eminently nutritious, and the preparation itself, unlike the many inferior imitations its success has brought forth, is active and permanent, and produces results upon which the practitioner can always rely.

Zymine (Fairchild).

Frequently the physician finding that the secretion of pepsin in the stomach is perfectly normal, desires to aid only the secondary digestive process in the intestines. Zymine, containing all the ferments of the pancreas, at once occurs as a suitable substance for trial. Zymine 'Tabloids,' keratin coated, are admirably designed to secure administration of this product, preserving it from the harmful action of the acid of the stomach.

The *Medical Magazine* of October, 1896, comments as follows:—

Pepsin (Fairchild).

"The introduction of late years of what may be termed "'commercial pepsins' has only served to increase "the appreciation in which this pepsin has all along "been held by the medical profession. The scale "form, which is an exceptionally beautiful as well "as active preparation, is greatly appreciated for "solutions, etc., while the powder is intended for "administration in the dry form."

Perhaps the most convenient and reliable form for the administration of this digestive agent is provided by Pepsin 'Tabloids,' in which the enzyme is rendered active by the presence of the natural percentage of acid.

Burroughs, Wellcome & Co.,
Snow Hill Buildings, LONDON, E.C.
Cable and Telegraphic Address—"BURCOME, LONDON."

Atomisation and Inhalation.

"Paroleine" and "Paroleine" Atomisers.

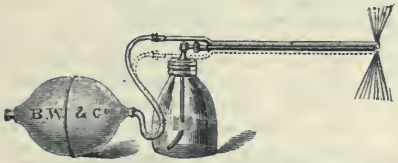
An oily solution of medicaments for application to the nasal naso-pharyngeal, and laryngeal mucous surfaces is often much to be preferred to an aqueous, spirituous, or glycerine solution.

Paroleine is an absolutely tasteless, odourless, and neutral solvent specially fitted for use with volatile substances, such as carbolic acid, eucalyptia, terebene, pinol, &c.

The B. W. & Co. Naso-Pharyngeal Atomiser

is intended, as its name implies, for the application of Paroleine solutions to the mucous membrane of the naso-pharynx, but by the addition of a tongue depressor it can also be employed for the treatment of the back of the throat. It is small and compact, and no difficulty can be experienced in its use.

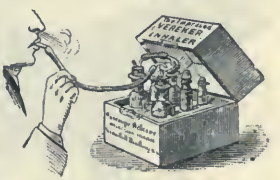
The B. W. & Co. Post-Nasal Atomiser



provides the laryngologist with a ready means of applying medicaments to the larynx, pharynx and post-nasal regions. By an ingenious device the spray can be directed either perpendicularly or laterally.

The Vereker Ammonium Chloride Inhaler.

The Vereker Ammonium Chloride Inhaler was the first which enabled neutrality of the fumes to be obtained with ease and certainty. It is very simple in design, and, once charged, can be used for a considerable length of time without having to be replenished. The acid and ammonia are contained in glass bottles, as is the water in which the fumes are washed, and the latter are consequently much more copious and dense than when sponges, pumice stone, or other media are used.



Neutral fumes of ammonium chloride have a most stimulating effect upon congested and inflamed mucous membrane, facilitating expectoration and relieving respiration at once. The vapour may be further medicated by adding a few drops of a volatile inhalant, such as Pinol or Eucalyptia to the water in the wash-bottle.

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'Tabloid' Chests & Cases.

For their portability, ready solubility, prompt and unimpeded action, absolute purity, moderate cost, convenient form and accuracy of dosage, 'Tabloids' of Compressed Drugs have received unstinted praise not only from members of the medical profession but also from explorers and travellers, who have conveyed them, under the most trying conditions, through every variety of climate, and have brought back the unused 'tabloids' in perfect condition.

After three years' exposure to the most adverse climatic conditions in the reeking swamps of the Aruwhimi and Congo, the equipment supplied to the Emin Pasha Relief Expedition was submitted to the *Lancet* for examination. Rigorous tests were applied to the remaining 'tabloids' with the result that the following laboratory report was issued:—"We find that these 'tabloids' have perfectly "preserved their efficiency."

Included in our collection of medicine cases supplied to famous expeditions and travellers are the "Stanley" Congo Chests, used throughout the Emin Relief Expedition; Surgeon-Major Parke's Aruwhimi Chest and Hypodermic 'Tabloid' Case; Captain Stairs' Medicine Belt; the Chests used during the occupation of Rhodesia by the British South Africa Company; the raw-hide Chests of Julius Price; the Stevens' East African Chest; the Muxworthy Uganda Chest; the Decle Case; the Rendall Case, which has travelled all over the world; the Burland Case, of Thibetan and Himalayan fame; a Case which weathered the Chitral Campaign; and many others of great historical interest.

Amongst recent additions to our list, attention is directed to the Cycle Handle-bar and Stay-bar 'Tabloid' Medicine Cases, which are adapted not only for regular employment in country practices, but also for use in emergencies when the cycle forms a convenient and speedy means of reaching patients.

Burroughs, Wellcome & Co.,

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'Tabloids.'

Blaud Pill 'Tabloids' (B. W. & Co.).

This effective method of administering nascent ferrous carbonate is based upon the definitely ascertained fact that exact proportions of ferrous sulphate and alkaline carbonate, carefully dried, finely powdered, intimately incorporated, lightly compressed, and preserved from oxidization by a special process of coating with sugar, will keep for years without change, and form ferrous carbonate even in the presence of the free acid of the gastric juice. Combinations of these 'tabloids' with Arsenic 1/64 gr., Aloin 1/20 gr., Arsenic and Strychnine 1/100 gr. each, or Arsenic, Aloin and Strychnine, are also prepared.

Cascara 'Tabloids' (B. W. & Co.).

These 'Tabloids' and their combinations are prepared with an extract made from carefully selected and fully matured bark. By a special process the laxative principles are retained, whilst the constituents which cause discomfort and griping pain are removed in the course of manufacture.

Quinine 'Tabloids' (B. W. & Co.).

'Tabloids' of Quinine ranging from ½ to 5 grains in weight, prove a most convenient method of administering this drug in a pleasant and active form. The insolubility of the ordinary quinine pill is a by-word, and contrasts markedly with the rapid disintegration of the 'tabloid' in the presence of moisture.

Compound Caffeine 'Tabloids' (B. W. & Co.).

(Antipyrin—"Knorr," 3 gr.; Caffeine, 1 gr.)

These 'Tabloids' combine the well-known therapeutic actions of the two drugs, Caffeine and Antipyrin. The latter is administered chiefly for its analgesic effects, the former for its stimulating action upon the heart and nervous system. Antipyrin is not only antipyretic in action, but it also reduces blood force, and seems to have a special influence upon the fifth nerve. The combination has been proved to be a valuable nerve tonic in appropriate cases. The Caffeine counteracts any tendency towards a disturbing effect upon the heart, which the Antipyrin might produce.

"These 'Tabloids,' being intended for internal administration, are made so that they disintegrate immediately when moistened with water."—*Brit. Med. Journal, April 11th.*

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Snow Hill Buildings, LONDON, E.C.
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Modern Pharmacy.

Ophthalmic 'Tabloids.'

Ophthalmic 'Tabloids' are minute discs as thin as foreign note paper, extremely delicate in appearance, very soluble, and prepared with a perfectly innocuous basis. Each 'tabloid' holds a definite quantity of alkaloid or other medicament, and presents a perfectly sterile and reliable mode of administering remedies to the eye.

Tincture 'Tabloids.'

In the light of recent surprising revelations of the indefinite and unequal composition of shop tinctures, physicians should hail with satisfaction this reliable, accurate, stable, and convenient method of dispensing tinctures. The advantages from the point of view of bulk of tincture 'tabloids' over the tinctures from which they are prepared are strikingly borne home by the juxtaposition of a pint bottle of tincture, and a little tube containing its equivalent in 'tabloid' form; a handful of 'tabloids' represents the active ingredients of a gallon of tincture in concentrated form.

Tincture 'Tabloids' are prepared by concentrating absolutely fresh tinctures previously tested for strength, and compressing them into stable and portable 'tabloids,' which are unaffected by any climatic influence, and rapidly disintegrate in water, wine, or spirit. Some of these Tincture 'Tabloids' were amongst those reported to be absolutely unaltered after being exposed for three years to the reeking atmosphere of Central Africa swamps. Further important points are the facts that Tincture 'Tabloids' are always divided into accurate doses, and only occupy a tithe of the space taken by ordinary tinctures. They are especially useful in fitting up medicine chests for travellers.

We now prepare the following tinctures in 'tabloid' form:—

Aconite	1 & 5 min.	Gelsem. Semp.	5 min.
Belladonna	1, 5 & 15 ,,	Hyoscyamus	1 & 10 ,,
Camph. Co.	2, 5 & 15 ,,	Nux Vomica	1, 3 & 10 ,,
Cannabis Ind.	5 ,,	Opium	2, 5 & 10 ,,
Capsicum	1 & 5 ,,	Strophanthus	2 & 5 ,,
Cinchona	30 ,,	"Warburg"	30 ,,
,, Co.	30 ,,	Zingib Fort. B.P. (Ess. Ginger)	5 & 10 ,,
Digitalis	1 & 5 ,,		

Burroughs, Wellcome & Co.,

Snow Hill Buildings, LONDON, E.C.

Cable and Telegraphic Address—"BURCOME, LONDON"

Modern Pharmacy.

Hypodermic 'Tabloids.'

The hypodermic is the quickest method of securing the physiological action of drugs. It is adopted for this reason in emergencies, where it becomes of the highest importance that drugs should be pure and reliable, of the utmost nicety of dose, and ready instantly in a soluble and undecomposed form.

The Hypodermic 'Tabloids' (B. W. & Co.) possess all these qualities and none of the disadvantages of ready-made solutions, which even when recently prepared, may be unreliable as to strength, or septic and irritating. The 'tabloids' keep unaltered for many years in any climate, are free from irritating salts, and are readily soluble. We are now supplying the following Hypodermic agents in 'tabloid' form:—

Aconitine Nitrate 1/130 and 1/260 gr.
Apomorphine Hydrochlorate, 1/10 and 1/15 gr.
Atropine Sulphate, 1/60, 1/100 & 1/150 gr.
Caffeine Sodio-salicylate 1/2 gr.
Cocaine Hydrochlorate, 1/10, 1/6, 1/4 and 1/2 gr.
Cocaine Compound (strong, medium, and weak local anæsthetic).
Codeine Phosphate 1/4 gr.
Colchicin 1/100 gr.
Cornutine Hydrochloride 1/60 gr.
Curare 1/12 gr.
Digitalin 1/100 gr.
Ergotinine Citrate 1/100 and 1/200 gr.
Eserine Salicylate 1/100 gr.
Eucaine Hydrochloride 1/3 and 1 gr.
Homatropine Hydrochlorate 1/250 gr.
Hyoscine Hydrobromate, 1/75 & 1/200 gr.
Hyoscyamine Sulphate, 1/60 & 1/120 gr.
Mercuric Chloride 1/60 and 1/30 gr.
Mercury, Sozoiodol 1/4 gr.
Morphine Bimeconate, 1/8, 1/6, 1/4 and 1/3 gr.
Morphine Hydrochlorate, 1/4 and 1/6 gr.
Morphine Hydrochlorate and Atropine Sulphate 1/6 gr. / 1/70 gr.
Morphine Sulphate, 1/2, 1/3, 1/4, 1/6, 1/8 and 1/12 gr.
Morphine Sulphate and Atropine Sulphate 1/2 gr. / 1/100 gr.
Morphine Sulphate and Atropine Sulphate 1/3 gr. / 1/120 gr.
Morphine Sulphate and Atropine Sulphate 1/4 gr. / 1/150 gr.
Morphine Sulphate and Atropine Sulphate 1/6 gr. / 1/180 gr.
Morphine Sulphate and Atropine Sulphate 1/8 gr. / 1/200 gr.
Morphine Sulphate and Atropine Sulphate 1/12 gr. / 1/250 gr.
Nitroglycerine (Trinitrin) 1/250 gr.
Picrotoxin 1/60 gr.
Pilocarpine 1/3, 1/6 and 1/10 gr.
Potassium Cantharidate 1/600 gr.
Potassium Permanganate 2 gr.
Quinine Bihydrochlorate 3 and 1 gr.
Quinine Hydrobromate 1/2 gr.
Quinine Hydrochloro-sulphate 2 gr.
Sclerotic Acid 1/2 and 1 gr.
Sodium Phosphate Compound
Sparteine Sulphate 1/2 gr.
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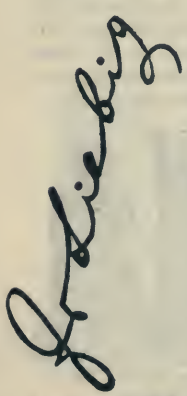

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PREFACE.

ALTHOUGH the past year has not been notable for the introduction of many new remedies, a vast amount of work has been done in threshing out the details of practical treatment both medical and surgical, and the industry of our contributors has furnished us with matter enough to have filled a far more imposing volume than the one we now present to our readers. But we are very fully convinced that a work of this kind loses much of its practical utility directly it becomes ponderous, and we have endeavoured by careful condensation, and by selecting information which has a direct bearing upon the daily work of the practitioner, to retain the work within, what we hope will be considered, reasonable limits. In doing so, we have relied upon the good nature of our contributors, who will realize our difficulty in holding the balance fairly between the claims of the various departments of medicine and surgery.

We have always been fortunate in the cordial help we have received from eminent physicians and surgeons in all countries, and we are particularly glad to welcome this year a series of articles on the diseases which demand particular attention from our Australian colleagues, and the methods used in their treatment. We have also some valuable information on Leprosy from the pen of Dr. G. Armauer Hansen, Inspector General of Leprosy in Norway, and on Oriental Diseases by Mr. Cantlie, who, as

one of our oldest contributors, we are glad to welcome back from the scene of his valuable labours in the East.

The articles on general medicine and surgery are the conjoint work of European and American scientists, and we believe we are correct in stating that no work of such a completely cosmopolitan character has been previously produced. This is in every way advantageous to the practitioner, who is thus brought at first hand in contact with the practice and views of those who, although living in different countries, or continents, are actuated by the same aims as himself, and have the same difficulties to grapple with.

To meet the wishes of our readers in all parts of the world, interested as they are in different branches of professional work, is not an easy task, nor is it one which we can hope to accomplish with perfect satisfaction, but we have been encouraged during the past fifteen years by the kindness of the medical press and profession, and we doubt not that the same courtesy will be extended to this Edition.

The "Medical Annual" Offices,
Bristol, England, February, 1897.

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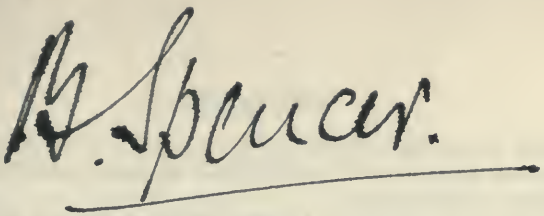

THE MEDICAL ANNUAL.

PART I.—THERAPEUTICS.

The Dictionary of New Remedies,

AND REVIEW OF THERAPEUTIC PROGRESS FOR 1896.

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INTRODUCTORY.

MR. WILLIAM MARTINDALE, in his Presidential Address delivered before the British Pharmaceutical Conference on July 28, 1896, gives an interesting account of the progress of pharmacy and the introduction of new medicinal agents during the last thirty years.

Chloral Hydrate, he pointed out, was first exhibited in 1869, and by the following year it had created a great sensation. **Boric Acid** was but a chemical rarity previous to 1875: it is now produced in tons for medicinal use, as well as for the purpose of preserving milk and foods. Regarding the desirability of the latter use of it, there may be difference of opinion, but there can be little doubt of its utility and value in hot climates, although it is being superseded by a new competitor in the field—**Formic Aldehyde. Iodoform**, too, was then but little known, and now makes its presence too evidently perceived by those who hopelessly try to have its odour disguised. With regard to **Carbolic Acid**, the crusade against the septic conditions prevailing in hospitals had commenced about this year, *i.e.*, 1868. The use of **Salicylic Acid** for the same purpose began in 1876. **Salicin**, obtained from the indigenous willow, although well known, was little used till 1876. The **Eucalyptus Products** were comparatively unknown here until about 1880. **Menthol** and **Thymol** also, although known, were not used at the period referred to. The introduction of the various forms of **Soft Paraffin** likewise comes within this period. In this connection it is curious to recall a statement made at the last Liverpool meeting, that "the effect of the application of

paraffin to the skin, though probably not injurious, if used as an adulterant of beeswax, is not sufficiently known to render its presence a matter of indifference."

The mydriatic alkaloids, **Atropine, Hyoscyamine,** and **Scopolamine,** were not then defined : the useful synthethic product **Homatropine** had not been formed, nor had the myotic alkaloid **Physostigmine** from the Calabar bean come into use. These have rendered immense service in ophthalmic surgery. The chemical properties and therapeutic uses of **Jaborandi** and **Pilocarpine,** of **Coca** and **Cocaine,** of **Coto** and **Cotoin,** of **Strophanthus** and **Strophanthin,** of **Gelsemium** and **Gelsemine,** of **Apomorphine, Caffeine, Cascara, Chrysarobin, Emetine** and **Cephaëline,** of **Piperazine, Saccharin,** and **Sparteine,** have all been investigated within the period named, while the synthetic alkaloid **Eucaine** now claims to be a rival of cocaine as a local anæsthetic. These two substances, eucaine and cocaine, are constitutionally allied, and probably others having similar properties will be formed. The now well-known synthetic coal-tar products, **Acetanilide, Antipyrin, Phenacetin,** and **Phenocoll** are entirely new to medicine. **Naphthalin,** which was principally known as a nuisance in blocking our gas-pipes, has proved to be a valuable intestinal antiseptic ; so also have its derivatives **Naphthol** and **Betol ;** these as well as the preparations of **Gualacol,** now largely used, were all then unknown as medicinal agents. **Aconitine,** which was then undefined, impure, and costly, has been proved to have the constitution of acetyl-benzoyl-aconine, and can now be obtained in a pure crystalline condition at a moderate price, and **Pseudaconitine,** from Nepaul aconite, has now been defined as having the constitution of acetyl-verartryl-pseudaconine. Of alcoholic derivatives the sulphonated products of methane—**Sulphonal, Trional** and **Tetronal,** together with **Paraldehyde** and **Urethane,** have found favour as hypnotics. As a general anæsthetic **Ether** has to some extent replaced chloroform, which was almost solely used at that time, while for local anæsthesia, the chlorides of **Ethyl** and **Methyl,** have come into use with considerable success.

Dr. Charles S. Boyer,[1] of Philadelphia, points out that within the last ten years the medical profession has witnessed the introduction of more new drugs and remedies into her materia medica than in any period of equal length in her history. The greater portion of these new preparations have been the immediate product of chemical research. Chemistry has, in the last twenty years, been placed on a solid foundation, and the chemist is now in a position, not only to reason out the reactions for the formation of new compounds, but is also able to present these reactions in such a manner that they may be

carried out on a practical scale. By following the tenets of theoretical chemistry, we form new compounds from simple substances in such a manner that the resulting product will retain all the therapeutic properties of the individual substances. We also figure out the probable structural formula for such a compound, and indicate its stability and its important chemical reactions.

The establishment of the coal-tar-colour industry marks an epoch not only in the industrial sciences, but also in the medical world. The immediate result of this new industry was the stimulation of chemical investigation. Two classes of chemical investigators arose—those who were concerned with purely scientific truths, and those whose chief aim was to obtain products having some direct practical value. During the course of these investigations the seeker after new therapeutic compounds frequently discovered products possessing a value as dyes; the dye-seeking chemist would prepare medical chemicals, while the investigator in the domain of pure chemistry would frequently discover compounds having great value in technical fields. Numerous researches having only a theoretical value, have emanated from the laboratories established in connection with the large German chemical works; while, on the other hand, the laboratories of the great German universities have been the birthplace of more than one compound which has been a blessing to man. It is evident that these two lines of investigation are so closely connected and interwoven that they virtually merge into one, and we cannot distinguish between them.

As to the benefit of this awakening in chemical research on medical science, the results speak more emphatically than could any words. As Professor Sadtler has aptly said, "If the question be asked, What limits can be set to the possibilities in the direction of synthetic manufacture? The answer is, When W. H. Perkin discovered mauve, the first of the aniline dyes, in 1856, no one could have predicted the enormous development of the coal-tar-colour industry. So now it is impossible for us to foresee how extensive or how rapid will be the development of the manufacture of synthetic remedies."

In view of these facts, it is necessary that medical men should be conversant, first, with the chemical character of the well-known synthetic compounds; second, with the synthetic compounds whose therapeutic value have not yet been fully established; and, lastly, with the possibilities of synthetic chemistry. A medical man can almost foresee the probable value of new compounds, if he will but view them from a *chemical-medical* standpoint. By this the author means the taking into consideration not only of the structural composition of the

compound, but also the medical properties of known compounds having an analogous composition, or containing certain *radicals*, or elements, which, when in certain positions, exert definite properties.

The large number of artificial remedies can be, for convenience, grouped according to their chemical composition into those whose theoretical structure is that of an *open chain*, as is illustrated in **Methane** and its derivatives, and into those having a *closed chain*, or *ring structure*, as, for example, **Benzole** and its derivatives.

Under Group I the author describes amylene hydrate, methylal or formal, acetal, piperazine, sulphaldehyde chloralose, chloral ammonium, chloralamide, uralin, chloralimide, dulcine or sucrol, euphorin, sulphonal, trional, tetronal.

Under Group II the author includes sulphamenol, acetanilide, exalgin, methacetin, phenacetin, methyl phenacetin, sedatin, phenocoll, agathin, diaphtherin, europhen, hypnone or acetophenone, gallacetophenone, benzo-naphthol, benzanilide, saccharin, diiodo-salicylic acid, sulpho-salicylic acid, dithio-salicylic acid, salol, salophen, betol, salipyrin, salicylamide, asaprol, alumnol, iodol, phenazon, iodopyrin, analgen, methyl kaeroline, methyl kaerine, thalline and thalline tartrate.

Many of these have been already described in the "Annual," but the information afforded by Dr. Boyer respecting their solubility and chemical nature is convenient for reference, and brief notes respecting these drugs will be found in the following section.

Glandular Therapeutics.

Glandular Therapeutics is the term applied by the editor[2] of the "Medical Press and Circular" to the use of the internal secretions of glands to supplement their lack in the individual as a consequence of disease or the removal of the corresponding organs. The field of what may be termed "glandular therapeutics" is being gradually extended, and the excellent results so far obtained warrant hopes of still more brilliant results in the near future.

According to the theory held and enthusiastically promulgated by the late Dr. Brown-Séquard, all glands, in addition to their obvious secretions, elaborate substances which pass into the blood, there to perform certain functions which, as well as their chemical composition, were still exceedingly obscure. We know such to be the case with the thyroid gland, we suspect as much in respect of the thymus, and it is extremely probable that other glands exert an influence over distant parts of the organism not as yet even suspected. The discovery that ablation of the testicles determines retrogression of the hypertrophied

prostate opens up a field for speculation in the opposite direction, though experiments are still in progress with extracts of the prostate gland having the same object in view. The latest discovery of the kind is that removal of the ovaries will cure that ill-understood and fortunately rare disease, **Osteo-Malacia.** One of the first effects of this discovery will probably be to throw more light on the exact nature of this affection, for there is reason to believe that under this designation various pathogenic modifications of the osseous system are at present included. In this country we are only familiar with osteo-malacia as an affection of advanced life, in spite of the fact that it is usually described as a disease occurring mainly, if not exclusively, during the child-bearing period of women's life. The cases reported abroad, moreover, usually comply with this definition, but the disparity is one which must be explained before we can get much further with the treatment of the disease. Osteo-malacia, or what is described as such in the aged, cannot very well derive its origin from changes involving the ovaries at their *point de depart*, and there are many other causes which may influence the nutrition of the skeleton without any reference to the sexual glands.

The effect of removal of the ovaries in arresting osteo-malacia has led Professor Curatula, of Rome, to carry out some very elaborate investigations on the effects of castration on the metabolism of healthy animals. It is a matter of common observation that castrated animals usually put on fat, and one of the objects of the professor's researches was to ascertain whether this accumulation of adipose tissue is due merely to lessened vital activity or to the absence of some secretion formerly poured into the blood which facilitated the oxidation of fats. His results appear to point to the truth of the latter hypothesis. He found, for instance, that castration was followed by an immediate diminution in the amount of phosphorus eliminated in the urine, the proportion of nitrogen remaining the same. The subsequent subcutaneous injection of ovarian juice at once brought about an increase in the proportion of phosphates, the increase varying more or less according to the amount of the juice injected. Moreover, the elimination of carbonic anhydride by the lungs undergoes a similar diminution after castration, corresponding possibly to a diminished oxidation of fats, and this doubtless explains the accumulation of adipose substances in the organisms of castrated animals. In support of the view that the internal secretion of the sexual glands is concerned, indirectly at any rate, in the development of the osseous system, the author mentions that giants usually have atrophied testicles, while, as a point of personal observation, the eunuch choristers of the Sistine Chapel all have

massive skeletons. Cases of osteo-malacia, especially of the variety which alone can be supposed to be amenable to this treatment, are rare in this country—indeed almost unknown, but the principle involved, if substantiated, is one capable of extension, and is of great scientific interest. (See also "Ovary, Extract of," p. 57)

Dr. Horatio C. Wood[3] gives a *résumé* of the present condition of this subject.

The ductless glands form substances which have relations with all the tissues, and modify protoplasmic movements. We have a firm, scientific foundation for the use of thyroid extract in **Myxœdema.** In **Hypertrophy of Cicatricial Tissues, Simple Goitre,** and **Obesity,** it should be tried; in exophthalmic goitre it does harm. Splenic extract has apparently cured one, and much benefited two others, of the last-named conditions. In **Addison's Disease** benefit is obtained from the use of glycerin-extract of suprarenal capsule. There has been no great success from the use of extracts of bone-marrow and of the spleen in leucocythæmia. There is sufficient evidence to warrant the use of medullary glyceride in cases of severe **Anæmia.**

The antitoxins have been used in tetanus, diphtheria, erysipelas, and in other infections. In one case of tetanus, which had a fair chance of recovery under the old treatment, death took place from exhaustion, with a rapid rise of temperature, suggesting that this result was referable to the antitoxin. As for **Diphtheria,** the value of the treatment has been sufficiently shown, so that every physician should use this just as much as he would quinine in malaria. Of course a Klebs-Loeffler bacillus antitoxin is useless against a streptococcus toxin, and in many and perhaps most cases death results from streptococcus-infection. Theoretically, then, the two antitoxins should be used in most cases of advanced diphtheria. Marmorek has reported the use of the streptococcus antitoxin, and on the whole the reports of Pozzi, Dieulafoy, Kelly, Sevestre, Cuffer, and Bar have been favourable. In any case of septic infection a cultivation is rarely necessary, for the clinical features in most cases, are sufficient to distinguish the cases. An infection which is localized produces freely of pus, has but little tendency to run, is usually due to a streptococcus; one which produces serous or ichorous, rather than purulent exudation, and rapidly courses along the lymphatics, or gives rise to erysipeloid symptoms, is the result of the labours of the streptococcus.

The progress of this interesting subject will be found under the headings of the various glandular extracts employed, *i.e.*, Thyroid, Supra-renal Capsule, Ovarian Extracts, etc. (See pp. 57, 74 and 80.)

Serum Therapeutics.

Serum Therapeutics has claimed a large share of the attention of investigators during the past year.

Maragliano[4] claims to have experimentally obtained an antitoxic serum which possesses curative efficacy in **Tuberculosis**, and which is giving good results in his own practice and in that of several of his confrères; the mode of preparation of this serum will eventually be published, though he is unwilling to make it known at present; it is derived, he says, "from animals vaccinated with all of the toxins contained in the virulent cultures, both those that resist and those that do not resist heat." Campana, of Rome, affirms his belief that Maragliano's serum is nothing but Koch's tuberculin, improved. As a dermatologist, he declares that this lymph in tuberculous affections of the skin favours the resorption of morbid infiltrations, but does not cure the tuberculous processes, and the same affirmation applies to tuberculosis of internal organs.

Fasano, of Naples, reported a case of pulmonary phthisis which seemed to have markedly improved under the use of this serum. Marrani, of Rome, has treated with benefit twelve cases of tuberculous broncho-pneumonia with Maragliano's serum. The results were disappearance of the fever, of the râles, of the cough, of the dulness, and a gain in spirits, appetite, and weight. Ascenzi of Rome, and Argento of Palermo, communicated—the first three, the second five—cases of tuberculosis treated with success by Maragliano's serum.

With regard to the serum treatment of **Diphtheria,** Mya of Florence stated that he had treated one hundred and twelve cases of diphtheria at the clinic of children's diseases with Behring's antitoxin; the results were twenty-two deaths and ninety recoveries. In a first series of fifty-one cases he had to do with diphtheria of the pharynx and larynx; there were fifteen deaths, giving a proportion of 29·4 per cent. (under the old treatment he used to have in these cases a mortality of 50 per cent.). A second series comprehends forty-three cases of simple diphtheria of the pharynx, with seven deaths and thirty-six recoveries. In a third and last series there were eighteen cases of pharyngeal diphtheria with beginning of extension to the larynx; all these recovered rapidly. In all these cases the diagnosis was controlled by the bacteriological examination.

Mya is in the habit of injecting daily during the first three days of the sickness 10 cc. of serum. In fatal cases he has often observed want of success to coincide with a notable degree of hypertrophy of the glands; the autopsy has disclosed, along with grave alterations

of the lymphatic system, fatty degeneration of the viscera. He is persuaded that if one would have recourse with success to sero-therapy in diphtheritic cases, there must be relative integrity of the lymphatic system. Another group of cases in which sero-therapy proves inefficacious includes those forms of diphtheria in which the exudate invades very rapidly the whole respiratory tract—that is, not only the larynx and trachea, but also the bronchial tubes. It is principally in the coldest months of the year that he has observed cases of this kind.

Maragliano, in summing up the diseases in which sero-therapy has been employed with more or less success, remarks that in streptococcus infection (notably in **Erysipelas** and **Puerperal Septicæmia**) the serum treatment has already produced sufficiently encouraging results to warrant further trials.

No success has followed attempts to similarly treat typhoid fever and cholera—that is, by the use of a serum obtained from patients recovered from the disease, or from immunized animals.

In **Tetanus**, among thirty cases treated with serum from animals immunized by attenuated toxins, there have been thirteen recoveries.

Maragliano sums up the statistics of sero-therapy in diphtheria by citing Huebner's figures: In 3066 cases there was a mortality of 20·6 per cent.; this is contrasted with a mortality of 38·8 per cent. before the use of antitoxin. He thinks that "the enthusiasm aroused by the discovery of Behring has been justified by the splendid results obtained in practice."

With regard to the serum treatment of **Pneumonia**, there is little to add to the results obtained some time ago by the two Klemperers, and by Fowlisky and Emmerich; the Klemperers, in particular, claiming remarkable clinical success in several cases with their "anti-pneumococcic serum." Pio-Foa has been making numerous experiments on animals with a serum of his own preparation, which he calls an "anti-pneumococcic vaccine." He first tried glycerin extracts of infected blood, the glycerized extracts of the bodies of bacteria remaining on the filter, the precipitates obtained with sulphate of ammonia, etc. After having found out the complete inefficacy of the chemical vaccinations, with the exception of the filtrate of the meningococcus, he tried to obtain a vaccine prepared according to Pasteur's methods (attenuated by heat, by oxygen, by light, etc.). He finally obtained the desired attenuation by means of Lugol's solution, and by means of intravenous injection he now succeeds in vaccinating hares against the different varieties of *Diplococcus lanceolatus*, so as to cause them to support with impunity 160 cc. of a culture sufficiently virulent to kill

the test animals in a few hours. The duration of the immunity seems to be quite long—that is, three months, at least.

The experiments which Pio-Foa related, where hares, dogs, sheep and goats were rendered refractory to the pneumococcus infection, were of great interest and warrant hope that the serum treatment may yet be found to be of unequivocal benefit in the pneumococcus diseases of man. Foa found that when both the diplococcus and the serum were injected at the same time the animal survived, and when the serum was injected five hours after the infection the symptoms were light and the animal soon recovered, which indicates that the serum also exercises a curative action.

Schaefer[5] discusses the present position of the serum treatment, and sums up as follows:—

(1,) **Tuberculosis.**—Richet and Héricourt were the first to treat the disease with serum obtained from refractory animals, but up to the present moment no good results have been obtained.

(2,) **Rabies.**—Serum treatment does not appear to have a great future, as immunization by intensive vaccination gives greater success.

(3,) **Pneumonia.**—The reason that serum treatment has not been more generally adopted in this disease is probably on account of the difficulty of obtaining the serum from immunized rabbits.

(4,) **Enteric Fever.**—The clinical application of laboratory facts has not given good results. This may be partly due to the length of time between the penetration of the poison and the treatment and partly, possibly, owing to mixed infections.

(5,) **Typhus.**—The injection of serum from patients who had suffered from typhus was adopted with good results by Legrain in an epidemic in Algeria.

(6,) **Cholera.**—The cholera peritonitis of animals is very different from cholera in man. Behring announced that he had obtained a curative serum, but the results have not yet been published.

(7,) **Syphilis.**—The serum from the dog and lamb have been employed, and with good results.

(8,) **Streptococcus Infection.**—Animals have been vaccinated against this infection. The serum so obtained has been used in puerperal fever with good effect. It has also been employed in erysipelas and angina.

(9,) **Cancer.**—The results as yet obtained are insufficient to carry conviction.

(10,) **Tetanus.**—Well-marked tetanus is very difficult to cure in animals, and thus it is not to be wondered at that the results obtained in man are not conclusive. The serum, however, provides a valuable prophylactic agent against tetanus.

(11,) **Diphtheria.**—It is in this disease that the serum treatment has registered its greatest triumphs. Where mixed infections exist the results have naturally not been so favourable. The slight accidents caused by the treatment are to be disregarded in view of its remarkable efficacy.

The general results thus far obtained by the serum therapy promise a successful future for this new method of treatment.

Dr. George G. Van Schaick[6] states that the use of exceedingly virulent cultures has enabled us to immunize animals and obtain an antitoxic serum of great activity. This streptococcus antitoxin possesses high preventive power in animals. The frequent association of diphtheria with streptococcal infection has suggested to French experimenters the propriety of preparing a serum having antitoxic properties against both the Klebs-Loeffler bacillus and the streptococcus by immunizing the same animal against both poisons. Further, it has been shown that animals which had already been immunized against diphtheria possess a remarkable degree of tolerance against streptococcal infection.

Marmorek has treated with streptococcus-antitoxin four hundred and eleven patients suffering from streptococcal infection in various forms, with a mortality of 3·4 per cent. In **Erysipelas,** with sufficient dose, relief was felt in from five to twelve hours after the administration of the first injection, headache and muscular pains are lessened, and sleep is restored; the temperature is lowered more or less rapidly. If it should not decrease within twenty-four hours, the injection must be repeated. Two or three hours after the injection there is a rise of temperature, which is again rapidly lowered, reaching the normal within twenty-four hours. When the intervention is practised early, a single injection seems to abort the disease. If the disease is further advanced, the fever disappears more slowly, and proves especially tenacious in ambulant erysipelas, usually necessitating repeated injections. The local state becomes ameliorated more or less rapidly according to the severity of the infection, the time at which the injection is made, and the quantity of serum employed. In some patients seen at the beginning, the redness disappeared, and in three hours the desquamation started. The latter occurs rapidly and in large shreds. Suppuration in the neighbourhood of the disease rarely occurs. Albuminuria, frequent in this disease, is not seen in those patients who receive the serum at the inception of the disease, and in those who have been treated twenty-four to forty-eight hours after the beginning it disappears very rapidly. Two forms of erythema have been occasionally observed, one is

urticarial and the other resembles purpura, but is not associated with any febrile movement.

Dr. William Vissman[7] quotes several authorities to show that the injection of blood serum was not altogether harmless, and so far as antitoxin serum was concerned he should judge, from the reports made, that its effect was far from indifferent. But since antitoxin was used almost exclusively in diphtheria, it was almost impossible to determine what anatomical lesions it produced, especially since nearly every one of the changes caused by antitoxin or blood serum when injected into healthy animals were also found in persons dying of diphtheria without antitoxin treatment. A few changes, however, had been observed in man, brought about by this agent independently of diphtheria. Horse serum caused a rise of temperature of one to three degrees, acceleration of the circulation, often followed by heart weakness and variable pulse. The exanthema observed after antitoxin treatment had also followed injection of simple horse serum.

Among the disagreeable effects observed after the injection of antitoxin were erythema, hæmorrhages into the skin, heart weakness, pain in the joints, with or without swelling; some had observed albuminuria more frequently, others less frequently, than usual for diphtheria. Inasmuch as healthy man was not available for experiments, Dr. Vissman had used rabbits, and gave a *résumé* of his work. The number experimented upon was eighteen, and a like number was used for control purposes. The changes produced were nearly the same in all that were injected. A nodule developed, with a radius of one inch from the needle, slightly painful on pressure, beginning to disappear on the second day. It was sterile. Little attention was paid other organs than the kidneys, except to note that the liver and spleen were somewhat swollen. In all cases there was injection of the blood-vessels of the kidneys and cloudy swelling. The animals which received more than one dose had slight hæmorrhages into the tubules, but fatty metamorphosis of the epithelial cells was not noticed. It was reasonable to assume that since antitoxin produced these changes in healthy rabbits, it produced similar changes in children.

In conclusion he said that, since the injection of serum into rabbits had been shown by himself and others to cause acute nephritis, it had probably had a similar effect in many persons, who had only problematically received any benefit from its influence on diphtheria. If all persons having diphtheritic bacilli in the fauces were treated with antitoxin, many would be injured for an uncertain benefit, for not all would have developed diphtheria. If the disease had gone sufficiently long for a diagnosis to be made independent of the bacillus, the anti-

toxin (it had been admitted) would have little influence. It was probable, therefore, judging by experiments upon animals, that the antitoxin treatment of diphtheria had increased rather than diminished the death-rate.

Mr. Herbert E. Durham[8] finds that by the action of the serum of highly immunized animals a remarkable series of effects is produced on an emulsion of actively motile microbes by the addition of minute quantities of potent kinds of serum.

These effects have been observed with the cholera vibrio, a variety of other vibrios, the typhoid bacillus, the bacillus coli communis, and the bacillus pyocyaneus.

It is improbable that the phenomena are limited to the groups and species here named.

The most prominent of the effects thus produced consists of an immediate aggregation of the bacteria into "clumps"; this is combined with loss of motility. Marked inhibition of growth also occurs.

The formation of clumps can be detected readily by the naked eye. Eventually they gravitate to the bottom of the tube containing them.

A "complete action" is obtained when all the clumps settle down, leaving a perfectly clear fluid. The time required for settling varies somewhat in different organisms, as also according to the amount and potency of the serum used.

The least quantity of serum which will give a complete reaction in about one hour forms a convenient standard. A highly potent serum will react thus in 1 per cent. solution, which is a convenient unit.

The more intense the action of the serum the more rapid and the more complete are the changes which ensue.

By means of the intensity of action in varying dilutions, two or more samples of serum, or of freshly-drawn blood, may be gauged according to their potency.

Normal serum, and the serum obtained by immunizations with totally unrelated groups of organisms, do not interact upon the unrelated microbes, so far as present observation shows.

The action of cholera serum upon more or less closely related vibrios may be "complete" or *nil*. A series of gradations in intensity of reaction has been observed with cholera serum and vibrios of other species, and *vice versâ*.

The action of such serum cannot be regarded as "specific"; it is better named "special" or "specialised."

The limit of the absolute value of such serum tests for the diagnosis of cholera vibrios has yet to be determined.

All the typhoid bacilli from sixteen different sources hitherto ob-

served react with typhoid serum ; none of them react with the B. coli serum.

Of the B. coli varieties hitherto proved some do not react with one sample of B. coli serum.

The agreement in action of the typhoid bacilli points to the use of the method for diagnostic purposes.

As shown by serum experiment the variation within the B. coli group is greater than that of B. typhi races.

By the method described more delicate changes can be observed than with such methods as plate cultivations, and fallacies thereof are avoided.

A vibrio and a vibrio serum which will give a "complete reaction" *in vitro* will also give a positive result in "Pfeiffer's reaction."

It is not worth while performing Pfeiffer's test unless a "complete reaction" has been obtained *in vitro*.

In the method described the whole series of changes, if any, are before the eye the whole time. In Pfeiffer's method the changes can only be seen by removing samples from their hiding place in the guinea-pig's peritoneal cavity.

Dr. Viéviorovski,[9] of Moscow, has made some experiments on the treatment of **Primary Syphilis** by means of blood serum from individuals affected with gummata or other tertiary forms. He was careful to select for his serum-giving subjects three persons of ages between twenty-five and forty in whom the disease had run a favourable course. The blood was obtained from the median basillic vein, and was received into a vessel into which had already been placed some solution of common salt of the strength of 20 per cent. and equal in quantity to one two-hundredth part of the volume of the blood to be drawn. From this mixture the serum was prepared and examined in chemical and bacteriological laboratories, none being used until it had been proved capable of standing in a thermostat at 37·5 C. for several days without developing any mould. It was preserved in the dark and in a cool place.

Five patients were experimented upon, all of whom had either hard chancres or syphilitic rash and sore throat, no other treatment being or having been employed. The serum was injected by means of a sterilized syringe with an asbestos plunger into the cellular tissue below the angle of the scapula, the mean dose being 10 cubic centimètres, and the skin being first carefully cleansed by means of ether, spirit, and carbolic acid. The injections were repeated every alternate day, and gave rise to scarcely any local disturbance. Under this treatment the patients rapidly improved, feeling better and being free from pain,

sleeping well and increasing in weight. The physical signs of the disease, too, showed that a good effect had been produced upon it, the chancres healing very quickly and the rash becoming less distinct.

More than twenty injections were given in each case. They did not, however, appear to have much effect in preventing secondary symptoms, so that Dr. Viéviorovski is far from professing to have discovered a perfect treatment for syphilis. He thinks, however, that he has shown that the serum of the blood of persons with tertiary syphilis has some beneficial effect on primary manifestations. His observations are of value from a theoretical point of view, and he proposes to carry out further researches on the subject. They are a continuation of previous observations published by Professor Pellizzari, of Florence, and M. Gilbert, of Paris.

Lacruz,[10] of Barcelona, has tried the effect of serum drawn from a healthy horse on several children in his wards. Doses of 3 to 5 cubic centimètres were injected daily for a period of three or four weeks. The serum seemed to act as a most powerful tonic. The red corpuscles increased in number, weight was gained, and the child became visibly stronger. There was no untoward secondary effect, except slight rise of temperature and some acceleration of pulse; neither was there any erythema or albuminuria. A trifling epithelial deposit seen in the urine indicated slight irritation of the kidney, and the urine became more acid. These phenomena, however, were merely transient. The good effects of the injections were quickly manifested; cases of **Athrepsia** in particular were speedily benefited, and the cure was maintained. Sixteen cases of **Chorea** treated in the manner described were cured in a period of fifteen days, on the average.

Dr. E. Maragliano[11] reports that following injections of serum, in the treatment of **Tuberculosis**, various cutaneous manifestations have been observed, such as small transient erythema, outbreaks of urticaria and phlegmonous infiltrations of subcutaneous connective tissue. Obviously, these could be caused by the injection of the serum *per se*, independent of the antitoxin which it contained or by the serum which contains antitoxin. So far as concerns the first, Héricourt pointed out that in the transfusion of the blood of animals to man there was noticed the readiness with which urticaria was produced. In this instance it was the subcutaneous injection of dog-serum in the treatment of tuberculosis, although the dog had not been vaccinated or inoculated in any way. Similar observations were made by Vidal.

Legendre reported that horse serum caused an erythematous eruption each time that it was injected into a man. Frequently, on the argument of *post hoc ergo propter hoc*, various manifestations have

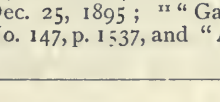
been attributed to the serum. Three hypotheses are possible, that these disturbances depend upon a special exciting action of the serum, or to a personal susceptibility of the individual, or to a combination of these two conditions.

Héricourt noted that the serum from some dogs was of double the toxic power of others. Further, it has been shown that a serum which could be used upon a considerable number of individuals without injury may cause accidents when used upon a particular one. Probably the third hypothesis is the most probable, and the personal factor of most importance is the vulnerability of the tissues. In case of these manifestations it is well to suspend the injection, recommencing after four or five days. If the quantity employed was more than 15 drops, it should be reduced to that amount and injected only once in two days. He concludes that the cutaneous disturbances consequent to injections of antituberculosis-serum are those common to injection, whether of normal or medicinal serum.

REFERENCES.—[1] "Therap. Gaz.," July 15, 1895; [2] "Medical Press and Circular," Jan. 15, 1896; [3] "Amer. Journ. Med. Sci.," June, 1896, and "University Med. Mag.," 1896, No. 7, p. 483; [4] "Boston Med. and Surg. Journ.," Nov. 28, 1895, and "Therap. Gaz.," Feb. 15, 1896; [5] "Therap. Gaz.," Oct. 16, and Dec. 16, 1895; "Archiv. Gén. de Méd.," Aug., 1895; [6] "Therapeutic Review," 1895, No. 3, p. 74; [7] "Med. Record," Nov. 30, 1895; [8] Paper read before the Royal Society, March 14, 1896; [9] "Lancet," Oct. 26, 1895; [10] "Arch. de Gin. Ostet. y Pediatria," Dec. 25, 1895; [11] "Gazzetta degli Ospedali e delle Cliniche," 1895, No. 147, p. 1537, and "Amer. Journ. Med. Sci.," March, 1896.

ACETAL—

$C_6H_{14}O_2$, occurs in the distillation of crude spirit, or may be produced by heating alcohol and acetaldehyde to 100° C. It is a limpid



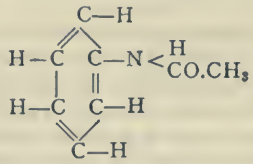
liquid, difficultly soluble in water, and having an odour like that of alcohol. It boils at 104° C., and has a specific gravity of ·8314 at 20° C. It is used as a narcotic.

REFERENCE.—"Therap. Gaz.," July 15, 1895.

ACETANILIDE—

$C_6H_5.NH.(C_2H_3O)$, was recognized by Cahn and Heppe in 1885 as an antipyretic. It is prepared by boiling equal parts of aniline

and glacial acetic acid for twelve hours, allowing the liquid to cool; whereupon it solidifies. The cooled mass is at once distilled until excess of acetic acid is expelled, and the liquid which passes over



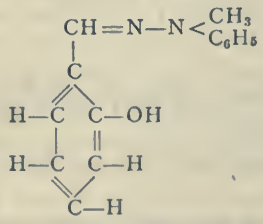
solidifies at 35° C.; when this point is reached, the receiver is changed and the acetanilide collected. When it is purified by recrystallization, the rhombic colourless plates melt at 112° C. It is soluble in 18 parts of hot or 190 parts of cold water; easily soluble in ether, alcohol, and chloroform. Its therapeutic properties are too well known to need description.[1]

Dr. Randle C. Rosenberger[2] reports the case of a child, sixteen days old, suffering from **Hæmorrhage** from the umbilicus. A paroxysmal cough made the hæmorrhage worse. A powder of equal parts of boric acid and acetanilide was to be locally applied twice daily. Three days after the face was distinctly cyanotic, the lips, ears, finger-tips, and toes bluish, the hands and feet cold, the breathing bordering upon stertor. The powder was discontinued and $\frac{1}{300}$ grain of strychnine sulphate with 10 drops of brandy in water was given four times daily. Within forty-eight hours the cyanosis had disappeared, the hands and feet were warm, the child was much brighter, and the hæmorrhage had not recurred.

REFERENCES.—[1] "Therap. Gaz.," July 15, 1895; [2] "Philadelphia Polyclinic," 1895, No. 45, p. 460.

AGATHIN—

$C_6H_4(OH)CH\ N_2CH_3C_6H_5$, is prepared by the condensation of



salicyl aldehyde with α-methylphenylhydrazin. It occurs in greenish

plates, having neither odour nor taste. It is insoluble in water, but soluble in alcohol, ether, and benzene.

$$C_6H_4OH.CHO + \begin{matrix} C_6H_5 \\ CH_3 \end{matrix} > N:NHH =$$

Salicyl aldehyde. α-methylphenylhydrazin.

$$C_6H_4OH.CH.N : NCH_3.C_6H_5$$

Salicyl aldehyde. α-methylphenylhydrazone.

Dr. Rosenbaum, after an extended use in the Frankfort hospitals, pronounces it a valuable antineuralgic.

REFERENCE.—"Therap. Gaz.," July 15, 1895.

AIROL.

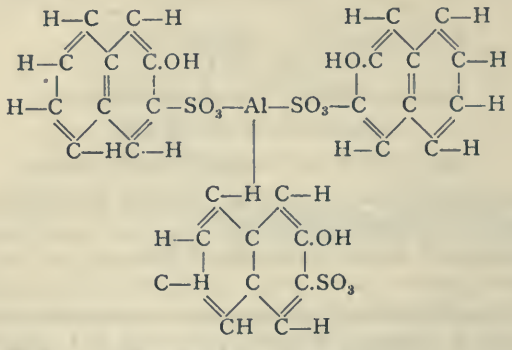
Veiel[1] gives the results of his experience with this antiseptic. Airol is a compound containing bismuth, gallic acid, and iodine; it is a green powder, tasteless and odourless and insoluble in water, spirit, or glycerine. It was first used in the treatment of **Ulcers** of the leg; these rapidly became painless, and their secretion diminished to an extraordinary degree. The granulations became firmer, and showed none of the tendency to overgrowth which is so common with iodoform; inflammation of the neighbouring skin, which is sometimes seen with iodoform and less often with dermatol, was absent with airol. The latter is therefore recommended in ulcers of the leg, particularly when complicated with **Eczema.** Veiel has also found it most serviceable in the treatment of **Ingrowing Toenail** with **Dermatitis Repens** and of small **Wounds,** both fresh and infected; in the latter its disinfecting power appears to be greater than that of iodoform. The obstinate **Fissures of the Nostril** accompanying sycosis of the upper lip, which so often lead to erysipelas, heal rapidly under the influence of airol ointment (10 per cent.). **Lupus Ulcers** skin over very rapidly, but airol has no specific action on the disease. Other special uses are in the treatment of primary **Syphilitic Sores** and the ulcers of mercurial stomatitis.

REFERENCE.—[1] "Wien. klin. Rundschau.," Oct. 20, 1895.

ALUMNOL—

$(C_{10}H_6(OH)SO_3)_3Al$, is analogous to asaprol in composition. It forms fine white, non-hydroscopic crystals, which are easily soluble in water, not quite so soluble in alcohol, the solution showing a beautiful fluorescence, and insoluble in ether. A 4 per cent. solution dropped in the eye stops the flow of tears for several minutes, enabling an

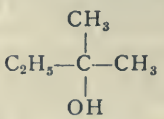
easy examination of the same. It is very soluble in water, and then has a neutral reaction.



REFERENCE.—"Therap. Gaz.," July 15, 1895.

AMYLENE HYDRATE—

$C_5H_{12}O$.—It is prepared from amylene by the action of sulphuric acid and water. It is a clear fluid, having a camphor-like odour. It



is soluble in 8 parts of water; also soluble in alcohol. Its specific gravity at 0° C. is ·827, and its boiling-point 102·5° C. When cooled to —12·5° C. it solidifies. Its use is that of an hypnotic and anodyne. It has not, however, been altogether satisfactory, as it seems to have no advantages over bromides, which are much cheaper. As an hypnotic, it is superior to paraldehyde, since it produces no disagreeable after-effects. It is not equal therapeutically to chloral.

REFERENCE.—"Therap. Gaz.," July 15, 1895.

ANÆSTHETICS. *Theophilus Parvin, M.D., Philadelphia.*

Sonntag[1] reports more than twenty-one cases of pneumonia caused by ether or chloroform narcosis occurring in the Erlangen Frauenklinik, from 1887 to 1894, in three hundred and thirty-eight laparotomies. In three hundred cases chloroform was used, and in thirty-eight ether; after the employment of chloroform there were fifteen cases of pneumonia, four of which were fatal, or 20 per cent., and after ether six cases of pneumonia, with four deaths, 66 per

cent., a result which speaks most unfavourably for ether. If pneumonia occurred after ether, the disease appeared suddenly, an average of two days following the operation, while the interval after chloroform was four days.

J. Mahler[2] (Budapest) gives the following conclusions as to the employment of ether and of chloroform in obstetrics and in gynæcology:—

(1,) Ether is a more reliable anæsthetic than chloroform, in that danger to life appears more seldom; ether in bad cases acts only in the respiration-centre, but never upon the heart or circulation.

(2,) The kind of ether narcosis, when properly employed and a pure preparation used, free from acid and aldehyde, is equal to that resulting from chloroform, without the injurious consequences of the latter.

(3,) In obstetric practice ether, on account of its favourable influence upon the activity of the uterus and the life of the child, is preferred to chloroform, but operating by artificial light, the latter only should be used.

(4,) In gynæcology in all cases in which there is degeneration of the heart or blood-vessels, or if there is great anæmia, or cachexia, chloroform is to be rejected on account of danger of heart paralysis. Chloroform is only to be employed when chronic or acute bronchitis, emphysema, phthisis, etc., contraindicate ether.

REFERENCES.—[1] Inaug. Dissertation, Erlangen, "Centralblatt f. Gynäkol.," No. xxviii, 1896; [2] "Centralblatt f. Gynäkol."

ANÆSTHETICS (Local). *Priestley Leech, M.D., F.R.C.S.*

The following mixture is given by Le Gerant[1] to be used as a spray for the production of anæsthesia:—

℞				
	Chloroform	10 parts	Menthol	1 part
	Ether	15 parts		

The resulting anæsthesia lasts about five minutes.

Parson's[2] local anæsthetic consists of:—

℞				
	Chloroform	12 parts	Tinct. of Pyrethrum	2 parts
	Tinct. of Aconite	12 parts	Oil of Cloves	2 parts
	Tinct. of Capsicum	4 parts	Gum Camphor	2 parts

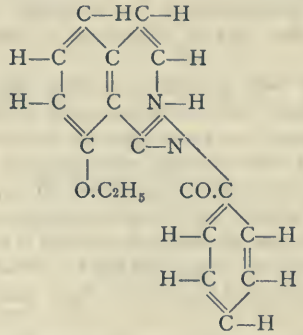
Dissolve the camphor in chloroform, add oil of cloves, and lastly the tinctures.

The injection of guaiacol in olive oil, 1 in 10 and 1 in 20, has been used in France as a local anæsthetic.

REFERENCES.—[1] "Med. Rec.," Dec. 28, 1895; [2] "Practitioner," Dec., 1895.

ANALGEN—

$C_9H_5NO(C_2H_5)NHCOC_6H_5$, is one of the latest analgesics. "Its synthetic composition was thought out before actual production of the compound was attempted, and knowing the activity of the combining



agents, the aim was to produce a substance of high physiological power by introducing a definite group of molecules having known pyretic action." Analgen occurs in white crystalline powder, consisting of microscopic needles, which are slightly soluble in water. It has been tried in cases of **Rheumatism** with gratifying success.

REFERENCE.—"Therap. Gaz.," July 15, 1895.

ANEMONIN.

G. Nola[1] concludes from his experiments that: (1,) This drug is a poison of slow action whatever may be the dose; (2,) The phenomena embrace three distinct periods: hypnotic, paralytic, and convulsant; (3,) The paralytic period can be marked by two phases: in the first, the sensibility and the reflexes are preserved; in the second, one or both are abolished or markedly depressed; (4,) This picture is constant for large or medium doses; with small doses there may be only a hypnotic action with return after some time to a physiological condition; (5,) The first two effects (sleep, paralysis) are constant, although in different degree, in all animals and in every dose; convulsions may be wanting, but only occasionally; (6,) They vary in intensity and form from simple isolated spasm to true tonic-clonic convulsions; (7,) The sleep, as from other hypnotics, is probably due to the physiologico-chemical action of the drug upon the cerebral cortex; (8,) The paralysis is of central origin, with the participation at first of the medulla, and later of the spinal cord; (9,) The convulsions are of bulbar origin; (10,) The respiratory and circulatory functions

are not at first influenced ; but later they are depressed, as are all the other organic functions ; (11,) Death occurs with complete muscular resolution through arrest of respiratory mechanism.

REFERENCE.—[1] "La Medicina Contemp.," No. 1, 1896.

ANTINOSINE.

Antinosine, a sodium compound containing iodine and phenol, is a blue powder, dissolving easily in water. It possesses antiseptic properties equal to those of iodoform. It arrests the development of nearly all pathogenic microbes. Clinically it has been found to be a useful dressing for cavities. The absence of odour and of toxic properties, as well as lack of any irritant effects, makes it especially useful in **Affections of the Nose, the Ear,** and **the Mouth.** In **Cystitis** and **Catarrh of the Bladder** it has been employed for the purpose of washing out this viscus.

It has been employed as a dressing for **Syphilitic** and **Non-Syphilitic Chancres,** with success. A ½ per cent. watery solution is used as a gargle in the treatment of **Throat Affections** or of **Middle-Ear Trouble.** Somewhat weaker solutions are employed for irrigating the bladder. On external surfaces it may be employed as a powder.

REFERENCES.—"La Méd. Mod.," and "Therap. Gaz.," Feb. 15, 1896.

ANTIPYRIN (Phenazon).

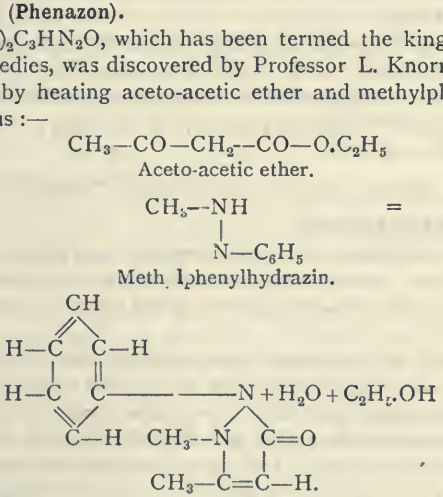
$C_6H_5(CH_3)_2C_3HN_2O$, which has been termed the king of synthetic medical remedies, was discovered by Professor L. Knorr in 1884. It is prepared by heating aceto-acetic ether and methylphenylhydrazin together, thus :—

$$CH_3—CO—CH_2—CO—O.C_2H_5$$

Aceto-acetic ether.

$$CH_3—NH \quad = \quad N—C_6H_5$$

Meth. lphenylhydrazin.



Phenazon forms colourless and odourless table-like crystals, which

have a mild, bitter taste. It melts at 113° C., and should burn without leaving a residue.[1]

Dr. H. Huchard [2] thinks that this drug might be used for the same purposes as iron perchloride and ergot. Its hæmostatic effects are powerful and rapid.

In **Epistaxis** a simple tampon moistened in a solution of the drug (1 to 5 or 1 to 2) is usually sufficient.

In more extensive **Hæmorrhages,** hot irrigations with a 4 per cent. solution, or even insufflations of the powdered drug, are useful. For hæmorrhages after ablation of polypi or extraction of teeth these methods are applicable.

In uterine hæmorrhages, due to different causes, large irrigations with a 5 per cent. solution should be terminated by the application to the neck of the uterus of a tampon wet with the same solution.

In hæmorrhage due to endometritis fungosa, equal parts of salol and antipyrin are melted at the fusion-point of salol, which gives a brown, syrupy liquid, and this liquid is used to moisten a tampon which can be placed in the uterine neck, a speculum being used, and over it a few other tampons.

After amygdalotomy moistened tampons are efficacious. For hæmoptysis, inhalations or sprays of a 1 per cent. solution have been effectual when other means, including subcutaneous injections of ergotin, have failed.

For open wounds a solution or a gauze impregnated with the powder coagulates the blood, which resists for a long time decomposition, because of the antiseptic and cicatrizing properties of the drug.

REFERENCES.—[1] "Therap. Gaz.," July 15, 1895; [2] "Journal des Praticiens," No. 19, 1895.

ANTITOXIN. (See Introduction to this section, "Serum Therapeutics.")

APOCYNUM CANNABINUM.

Apocynum cannabinum has long been used as a diuretic and indeed is included in the United States pharmacopœia. Its value in general **Dropsy** due to renal disease gained for it the name of "the vegetable trocar."

Its physiological properties have recently been investigated by Dr. Dortschewski, who finds that the most active portion of the plant, from a pharmacological point of view, is the cortex of the root. An extract was prepared from this and diluted with from ten to twenty times its volume of water. Less than 100 cubic centimètres of this diluted extract was sufficient to kill a medium-sized dog. The effect was to increase the blood pressure and to cause the heart's beat to be-

come at first slower, stronger, and reduplicated, but subsequently rapid and irregular until the animal died. The effects were due to the action of the drug on the motor centres of the brain and spinal cord, the slowing of the pulse being caused by the stimulation and its rapidity by paralysis of the pneumogastric centres. The increased blood pressure, too, was due to the contraction of the peripheral arteries from central action.

In clinical practice it was found that patients with **Cardiac Mischief** could take from 5 to 10 drops three times daily with marked advantage. Larger doses were apt to cause nausea and vomiting.

REFERENCE.—"Lancet," May 16, 1896.

APOLYSINE.

Dr. de Nencki and Dr. de Jaworski, of Warsaw, have recently investigated the chemical and physiological actions of this substance, which is closely allied to phenacetin.

Apolysine is a yellowish-white crystalline powder, having a characteristic odour. It is soluble in cold water in the proportion of 1 in 25, and freely soluble in boiling water. It melts at a temperature of 161·3° F. It dissolves both in alcohol and in glycerine.

In its origin apolysine may be compared to phenacetin. Both compounds spring from paraphenetidine, and there is no difference between them, except that an atom of hydrogen in paraphenetidine [phenacetin?], in the amide group (NH_2), is replaced by the element of acetic acid, while in apolysine the same atom of hydrogen is replaced by the citric-acid nucleus. On comparing the chemical formulas of these combinations their origin, their formation, and their difference may be more readily understood. They show that apolysine is very closely allied to phenacetin.

Apolysine has no toxic action, but possesses remarkable antipyretic and analgesic properties. The observers administered the drug both as an antipyretic and as an analgesic, and as an antipyretic only. They employed it in many cases, and in febrile affections a lowering of the temperature of from 1 to 2 degrees was observed, which was maintained for three or four hours at a time. In painful affections, such as **Neuralgia,** etc., the pain disappeared rapidly after the administration of a few doses.

Clinical observations have led to the following conclusions :—

(1,) Apolysine administered to fever patients lowers the temperature and at the same time prevents a series of co-existing symptoms, particularly pain.

(2,) Given to patients suffering from neuralgia, etc., it diminishes the

violence of the pain, allays hyperæsthesia, shortens the duration of the attack, and often completely suppresses the symptoms.

(3,) Owing to its chemical properties, it acts promptly and regularly, and exercises no injurious effect on the organism. Its employment is contraindicated during fasting, and when there are excessive acid secretions in the stomach.

(4,) Apolysine is more soluble than other drugs in the same group, and consequently more promptly and more easily absorbed.

REFERENCES.—"Allgemeine medicinische Central.-Zeitung," 1895, Nos. 60, 61 and 62; "Presse médicale," Oct. 26, 1895, and "New York Med. Journ." Nov. 30, 1895.

ARISTOL.

This substance is an iodide of thymol, the exact chemical constitution of which is not yet certain. It is a reddish inodorous powder.

Dr. Davis[1] recommends it in **Affections of the Mucous** and **Serous Membranes,** and speaks of it as an admirable drying powder for **Ulcers** and **Wounds.**

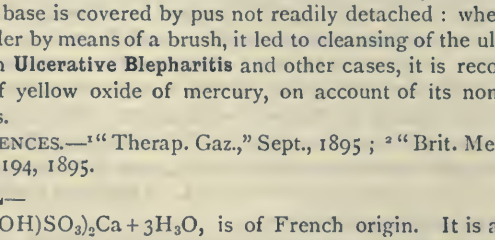
Eichhoff[2] has used it with success in **Psoriasis** and **Lupus;** it may be applied as an ointment of 10 per cent. strength, with vaseline.

Heuse finds it an excellent remedy in long existing **Corneal Ulcers,** when the base is covered by pus not readily detached: when applied as a powder by means of a brush, it led to cleansing of the ulcer in two days. In **Ulcerative Blepharitis** and other cases, it is recommended instead of yellow oxide of mercury, on account of its non-irritating properties.

REFERENCES.—[1] "Therap. Gaz.," Sept., 1895; [2] "Brit. Med. Journ.," vol. i., p. 194, 1895.

ASAPROL—

$(C_{10}H_6(OH)SO_3)_2Ca + 3H_3O$, is of French origin. It is a powerful antiseptic, made by acting on β-naphthol with sulphuric acid, and then forming the calcium salt of the resulting acid. It is a white, scaly



powder, easily soluble in water. It decomposes near 50° C. It is an antiseptic, antirheumatic, and antithermic agent. Growth of the bacilli of **Asiatic Fever, Typhoid,** etc., is prevented by the use of this compound.

REFERENCE.—"Therap. Gaz.," July 15, 1895.

ATROPINE AND ITS ALLIES.

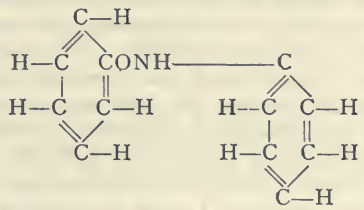
Dr. Gordon Sharpe gives an admirable *résumé* of the recent discoveries in connection with this important group of remedial agents. He concludes that hyoscyamine is practically identical with atropine, and that daturine and duboisine might be regarded as impure atropine. Atropine is the alkaloid of which we know most, and we might call it the fundamental or representative base ; and our knowledge permits us to say at least that in hyoscine and scopolamine we have a certain proportion of atropine along with a varying proportion of a conversion or decomposition product of atropine, and which one might call α-tropeine.

The hydrobromate of scopolamine, an isomer of cocaine obtained chiefly from *Scopola Japonica*, has been largely employed of late for dilating the pupil, and is much more active than atropine (see "Scopolamine").

REFERENCE.—"Brit. Med. Journ." Dec. 21, 1895.

BENZANILIDE—

$C_6H_5.CO.NH.C_6H_5$, is closely allied, both chemically and therapeutically, to acetanilide. It is obtained by boiling equal parts of benzoic acid and aniline, and occurs as a white, crystalline, odourless powder,



which has a slightly caustic taste. It is practically insoluble in water, soluble in 58 parts of cold and 7 parts of hot alcohol, and melts at 163° C.

REFERENCE.—"Therap. Gaz.," July 15, 1895.

BENZONAPHTHOL—

$C_6H_5.CO.OC_{10}H_7$, is a recent substitute for betol. It is prepared by heating powdered β-naphthol with benzoyl chloride on a sand-bath slowly to 125° C. and then for a half-hour to 170° C. After cooling, the mass is recrystallized twice from alcohol. It occurs as small white, odourless, and tasteless crystals. It is practically insoluble in water at 15° C., more soluble in alcohol, and easily in chloroform. It melts at 110° C.

REFERENCE.—"Therap. Gaz.," July 15, 1895.

BERBERINE.

Dr. C. D. F. Phillips[1] has recently investigated the physiological action of berberine, an alkaloid found in calumba root, in the rhizome of podophyllum peltatum, of hydrastis canadensis, and in other plants. When pure it occurs in yellow acicular or prismatic crystals, having a bitter taste and neutral reaction, readily soluble in boiling water, very slightly so in cold water. Its salts are also yellow in colour, and very insoluble in cold water. From ½ to 1 grain administered hypodermically to rabbits cause death after some hours, with muscular tremors, paresis, especially marked in the hind limbs, and great embarrassment of the respiration. The alimentary canal is not affected when the substance is given subcutaneously. In dogs 2·75 grains by the mouth produce gastro-intestinal irritation, abundant watery and mucous diarrhœa, marked salivation, general muscular tremors, and paresis. Respiration is not affected. After death the spleen is contracted, as also the whole intestine, and the abdominal organs generally are much congested; the heart contracted. Berberine exerts a decided action on the alimentary tract when given by the mouth, but when given hypodermically, so much irritation is caused locally, and such large quantities of fluid are required to dissolve it that the slowness of its absorption renders its action very uncertain. In rabbits and dogs the first manifestations after medium doses are profuse salivation, with loose motions, followed by severe watery diarrhœa and colic; great thirst and muscular tremors also occur. After death from an overdose the intestines are found contracted, generally empty, or containing an abundance of mucous and watery fluid, the mucous membrane being much inflamed. There does not appear to be any direct action on the liver, as there is no increase in the quantity of bile produced, but the gall bladder is usually found contracted. When applied to the heart of a pithed frog *in situ* the effect is not very marked.

Berberine causes a slight increase in the quantity of urine eliminated, even after the injection of small quantities of solutions into the venous circulation, quantities not sufficiently large in themselves to cause any increase in the urinary flow apart from the action of the drug.

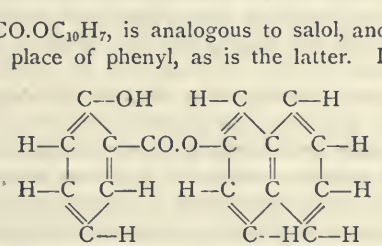
The increased diuresis is dependent rather upon the elevation of the blood pressure brought about by the drug than by any direct stimulation of the renal cells themselves. By repeating small doses with sufficient frequency a state of almost constant contraction of the organ may be brought about, and thus a diminution in the urinary flow. Berberine cannot therefore be said to have any very marked action upon the kidneys themselves as a special diuretic, though it undoubtedly

does cause under ordinary conditions an increase of the urinary eliminative processes. As has already been stated, after death the spleen is found to be very much contracted, but if the organ be studied during life with the oncometer it is seen that this organ follows much the same course as the kidney, diminishing in size with the fall in pressure, and again expanding when the pressure has risen. This latter effect—expansion—however, does not occur at the same time as the rise in pressure, but comes on gradually a little later, and after a short duration the organ again contracts to a little less in size than the volume previously occupied, and thus the spleen is a little smaller after each dose, until finally it becomes very markedly contracted, and will no longer respond, except by a further contraction to the subsequent administration of the drug.

REFERENCE.—[1] "Brit. Med. Journ.," Dec. 21, 1895.

BETOL—

$C_6H_4(OH).CO.OC_{10}H_7$, is analogous to salol, and is obtained from β-naphthol in place of phenyl, as is the latter. It occurs in white,



odourless, tasteless micaceous scales, melting at 95° C. It is nearly insoluble in water, easily soluble in boiling alcohol (1 to 3), also in ether and benzine, only slightly soluble in cold alcohol. It is an internal antiseptic.

REFERENCE.—"Therap. Gaz.," July 15, 1895.

BISMUTH.

Carles[1] controverts the theory that subnitrate of bismuth has a merely mechanical action.

Gayon and others have proved that it has a powerful bactericidal action, and the author found that an easily decomposable solution containing subnitrate of bismuth keeps indefinitely.

Gosselin and Heret have found it useful for cleansing **Putrid Wounds.** To understand its action when given internally one must remember that the purest specimen tends to split up into bismuth oxide and nitric acid when in contact with water.

Action on the Stomach.—The oxide, which is in excess of the acid, acts first as a detergent to the gastric mucous membrane and

precipitates the mucus, and, secondly, by its special germicidal power. The nitric acid has a tonic astringent and also a special antiseptic action.

Action in the Intestine.—Here it meets with sulphuretted hydrogen gas, which converts it into black sulphide, thus liberating a further portion of its acid, which is again partially transformed into nitrous vapours, the antiseptic action of which has been proved by Girard and Pabst.

For these reactions to take place it is necessary: (1,) That the subnitrate should be pure and not mixed with carbonate; (2,) That it should be as finely powdered as possible.

Mathieu[2] reports the case of a patient suffering from hypersecretion of hydrochloric acid, for whom he had prescribed 3¾ drachms of bismuth subnitrate in the morning, and 75 grains at night, with $\frac{1}{120}$ grain of atropine sulphate. This treatment the patient continued to carry out while the physician was absent on a vacation of about twenty-four days, and took during this time about 15 ounces of the subnitrate of bismuth.

This amount had no effect upon the general condition of the patient, and did not aggravate the gingivitis and stomatitis which had been present for some time previous. There was no tattooing of the cheeks, but a pigmentation, similar to that seen during pregnancy, developed, gradually disappearing after the cessation of treatment.

This dose produced only slight constipation, and did not modify the function of the stomach, the condition remaining the same after treatment as before.

Bismuth Naphtholate.—Dr. Edmund Chaumier[3] regards beta-naphthol as the best of all intestinal antiseptics, although it has a disagreeable taste. It can be prescribed as a mixture with some bismuth salt, or as beta-naphthol bismuth, which has no burning taste. The last in the alimentary canal decomposes, breaking up into naphthol and bismuth oxide. It is a grey powder, slightly aromatic, and contains 26·5 per cent. of beta-naphthol.

In **Infantile Diarrhœa** the fœtid stools lose their odour, the watery evacuations become thicker, and the green colour disappears under the influence of this drug. It can be administered in 2 to 5 per cent. solution in quince-syrup, of which the dose is 1 teaspoonful.

In diarrhœas of larger children and of adults the remedy acts quickly, and with a sufficient dose—75 to 150 grains in wafers—they disappear within one or two days. If the pain is severe, opium may be added. For both infants and adults it is well to continue the remedy for some time after the diarrhœa has stopped.

The **Diarrhœa of the Tuberculous** is of great importance, because it interferes with nutrition, emaciates the patients, causes them to lose strength, and prevents the administration of proper remedies. The remedy has been used as well in the temporary diarrhœa, which in a few days will undo the benefits of several months, and in the chronic form, which is almost continuous, and constitutes the principal lesion. In the first case stop the creasote carbonate, the only active and safe drug against tuberculosis, and give naphthol bismuth, not only during the disease, but for several days after. In the chronic cases, when the diarrhœa has existed for several months or years, the abdomen is painful upon pressure, and the appetite is very much diminished. After prolonged use of the drug these symptoms disappear, and the creasote can again be administered.

In **Typhoid Fever** the intestinal disinfection was perfect, the tongue was always clean and moist, and the convalescence was brief.

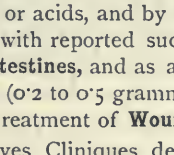
Bismuth Phosphate.[4]—The soluble bismuth phosphate is made by heating a mixture of bismuth oxide, sodium carbonate, and phosphoric acid. It contains about 20 per cent. of bismuth oxide, and dissolves readily in two or three times its weight of water. Its concentrated solution becomes turbid on standing but a short time, the 5 per cent. solution keeps more than twenty-four hours, while weaker solutions are permanent for several days. Solutions of this bismuth phosphate are almost neutral to test-paper, of a saline taste, and become turbid on the addition of alkalies or acids, and by the action of heat.

This salt has been used with reported success in **Acute Catarrh of the Stomach and of the Intestines,** and as an intestinal antiseptic, in doses of from 3 to 8 grains (0·2 to 0·5 gramme) three times daily. It has also been used in the treatment of **Wounds.**

REFERENCES.—[1] "Archives Cliniques de Bordeaux," Feb., 1896; [2] "Rev. Internat. de Méd. et de Chir.," Jan. 10, 1896; [3] "Journ. des Praticiens," 1895, 2e semestre, No. 12, p. 184; [4] "Indian Med. Chir. Rev.," April, 1896.

CHLORAL AMMONIUM—

$C_2Cl_3H_4NO$, is prepared by passing ammonia gas through a solution



of anhydrous chloral in chloroform. It is obtained as small needles, melting at 62° to 64° C., and almost insoluble in cold water. Hot

water decomposes it into ammonia and ammonium formate. On standing six to eight months, it suffers decomposition into ammonia, ammonium chloride, and chloralformamide. When heated to 100° C. the products of the decomposition are very complexed.

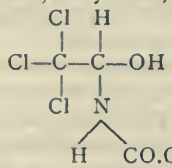
REFERENCE.—"Therap. Gaz.," July 15, 1895.

CHLORAL URETHANE, or URALIN—

$C_5H_8NCl_3O_3$, is another of the chloral substitutes. It is obtained by mixing a solution of chloral and urethane with strong hydrochloric

$$CO<\begin{matrix}NH_2\\O.C_2H_5\end{matrix}$$

acid. It is obtained as a white, scaly mass, melting at 103° C. It is

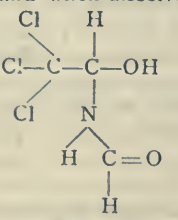


easily soluble in alcohol and ether, but almost insoluble in water. It is split up into its components when treated with hot water.

REFERENCE.—"Therap. Gaz.," July 15, 1895.

CHLORALAMIDE—

$C_3H_4Cl_3NO$, is obtained by the combination of anhydrous chloral and formamide. It consists of colourless, odourless crystals, having a mild, slightly bitter taste, and melting at 114° to 115° C. It is soluble in 10 parts of cold water, and when dissolved in water heated above

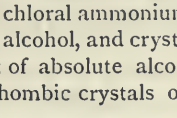


60° C. it decomposes into chloral and formamide. On this account care should be taken to use cold water for its solution. It was proposed in 1889 by Von Mering as an hypnotic. It induces naturla and refreshing sleep, and, as a rule, is not followed by headaches on awakening. It is thought by some to be a deeper sleep than that produced by chloral. It was at one time thought that its action was caused by the decomposition in the system, but there does not occur with it the marked depression so characteristic of chloral.

REFERENCE.—"Therap. Gaz.," July 15, 1895.

CHLORALIMIDE—

$C_2H_2NCl_3$, is obtained by boiling chloral hydrate with ammonium acetate, or by heating solid chloral ammonium to 100° C. The product is washed with 95 per cent. alcohol, and crystallized from a mixture of 1 part of benzene and 1 part of absolute alcohol. It occurs as colourless, inodorous, tasteless, rhombic crystals or needles, which melt at

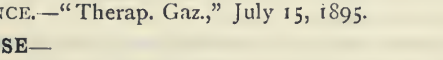


150° to 155° C. It is easily soluble in alcohol (2 parts in 100 parts of 95 per cent. alcohol), ether, chloroform, and the oils; insoluble in water. It decomposes by heating with water to 180° C. into CO_2, hydrochloric acid, chloroform, chloral, ammonium chloride, formamide, and formic acid. It is analogous therapeutically to chloral.

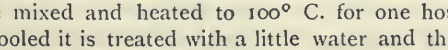
REFERENCE.—"Therap. Gaz.," July 15, 1895.

CHLORALOSE—

$C_8H_{11}Cl_3O_6$.—Hauriot and Richet combine chloral and glucose and obtain an hypnotic. Equal parts of anhydrous chloral and dry glucose are mixed and heated to 100° C. for one hour. After the mass has cooled it is treated with a little water and then with ether. By removing the ether-soluble portion, adding water, and distilling five or six times with water until the chloral unacted upon has been driven off, a residue is obtained, which, by successive crystallizations, separates into two bodies. The first of these is slightly soluble in cold water (6 to 1000), but easily in hot water and in alcohol; the second is difficultly soluble, even in hot water. The first compound has been named by its discoverers *chloralose*, and the second *parachloralose*. Chloralose consists of small needles, having a bitter taste and melting at 187° C. These being very recent products, comparatively little is known of their therapeutic value. The structural formulæ for these compounds are :—



Chloralose.



Parachloralose.

Parachloralose melts at 227° C.; it sublimes, if carefully heated,

without decomposition ; it is unacted upon by acids, and only slowly attacked by boiling solutions of alkalies.

REFERENCE.—"Therap. Gaz.," July, 1895.

CITROPHEN.

Benario[1] has used citrophen as an antipyretic in ten cases of **Typhoid Fever,** in three cases of **Febrile Phthisis,** in one of **Angina,** and nine of **Influenza.** He has also used it in fifty-six cases as an antineuralgic. In typhoid fever the temperature fell 1·2° to 2·6° C. after doses of 0·5 to 1 grain. In influenza the antipyretic and antineuralgic action of the drug was well studied. Citrophen proved useful in phthisis, the evening temperature falling 2·5° to 3·5°, and the patient feeling comfortable. The only disadvantage is the sweating. As an antineuralgic the author has found it very useful. Good results were obtained in three cases of **Sciatica.** In **Nervous Headaches** its action was satisfactory. In pains occurring during **Menstruation** it gave good results in two cases. Phenetidin is found in the urine twenty minutes after the ingestion.

The author relates illustrative cases showing that citrophen acts as a prompt and sure antipyretic and antineuralgic.

REFERENCE.—[1] "Munch. med. Woch.," April 21, 1896.

COCAINE.

Reclus,[1] at a meeting of the Académie de Médicine of Paris, said that local anæsthesia by injections of cocaine, of which he had been a partisan for ten years, had not yet found many adherents. He thought it desirable to recall in a few words the principles to be observed in its employment, and to explain the reason why accidents have been reported from time to time from its use. He affirmed once again the eminent anæsthetic properties of cocaine, which he considered to be superior to all those used with the same therapeutic object, and in particular to guaiacol, a drug which had recently been warmly recommended by one of his colleagues.

He had made a comparative study of these agents, employing them in the region he was about to operate, one on either side ; he found that anæsthesia was complete in the part which had received the injection of cocaine, while the sensibility was not entirely abolished in the region submitted to the guaiacol.

The accidents attributed to cocaine were due to the operator, and not to the drug, and could have been easily avoided if the indications he had repeatedly laid down had been followed. They were to use only 1 per cent. solutions ; never to exceed the total dose of 3 or 4 grains of cocaine ; to always place the patient in a recumbent position, and to avoid penetrating a vein.

It was by observing these rules that he had been able to peform three thousand five hundred operations without a single accident; not even did he once observe an attack of syncope or vomiting.

He employed cocaine exclusively in cases where the field of operation was not too extensive. He did not use it in abdominal surgery nor in amputations of the limbs. However, in two cases, where he was not able to give chloroform by reason of cardiac trouble, he used with success cocaine in amputating the arm.

REFERENCE. —[1] "Medical Press," May 27, 1896.

CREASOTAL.

Reiner[1] points out that the undoubted value of creasote in lung affections is somewhat discounted by the irritant effects of large doses leading to chronic inflammation of the alimentary tract.

Creasotal has been introduced to get over this disadvantage; it breaks up in the intestine into creasote and carbonic acid. The decomposition is a slow one, so that the organism is more or less continuously under the influence of creasote, which is excreted by the lungs and kidneys. It may be given neat in teaspoonfuls, or if the patient is very susceptible to its slight taste this may be covered by milk, sweet wine, etc. Very large doses (300 grains a day) can be administered without upsetting the digestion. Just at first there may be some nausea or even vomiting, but these do not contraindicate the continued use of the drug, as they very soon pass off. Creasotal has an extraordinary power of improving the appetite, which may even become ravenous by its use.

Reiner's conclusions are as follows :—

(1,) Creasotal has precisely the same specific action upon pulmonary tuberculosis as creasote.

(2,) In addition to this, it is of exceptional value in the symptomatic treatment of **Tuberculosis**, diminishing and deodorising the expectoration, and increasing the appetite.

(3,) Creasotal has a favourable influence on the general condition, improving nutrition, and leading to increase of body weight, and so indirectly limiting the spread of the lung affection.

(4,) It is to be preferred to creasote on account of its milder action, and is indicated in cases where the latter is tolerated with difficulty or not at all. Furthermore, it may be used in non-tuberculous affections, such as **Carcinoma of the Uterus** to increase the appetite and improve the bodily health.

REFERENCES.—[1] "Therapeut. Wochenschrift," Sept. 15, 1895, and "Brit. Med. Journ.," Jan. 25, 1896.

CROTALUS HORRIDUS. (See "Serpent Venom, p. 67.")

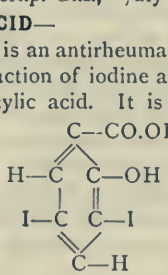
DIAPHTHERIN—

$(OH).C_9H_6.NH.O.SO_2.C_6H_4.ONH.C_9H_6(OH)$, is made by combining one molecule of aseptol (orthophenolsulphonic acid) with two molecules of oxyquinolin. When recrystallized from water it forms amber-yellow, hexagonal crystals, possessing a carbolic acid odour. When powdered it is soluble in its own weight of water and easily soluble in most ordinary solvents. It melts at 85° C. It is a powerful non-irritant and a relatively non-toxic, agreeable antiseptic. It, however, possesses a very serious defect—namely, that it blackens nickel and silver, and cannot, therefore, be used for disinfecting operating instruments. It is claimed to possess less toxic effects than carbolic acid or corrosive sublimate, and to be equally, if not more, powerful as an antiseptic, used in ½ to 1 per cent. solutions.

REFERENCE.—"Therap. Gaz.," July 15, 1895.

DIIODOSALICYLIC ACID—

$C_6H_2I_2(OH)COOH$, is an antirheumatic and antiseptic, like salicylic acid, obtained by the action of iodine and mercuric oxide on an alcoholic solution of salicylic acid. It is slightly soluble in cold, more

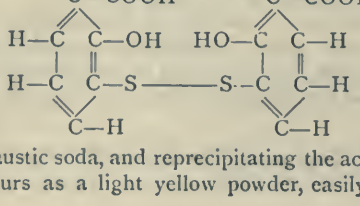


readily in hot water and in alcohol. It crystallizes in needles, having a melting-point of 220° to 230° C. The sodium salt of this acid is the compound which has been used. It has not, however, been thoroughly studied.

REFERENCE.—"Therap. Gaz.," July 15, 1895.

DITHIOSALICYLIC ACID—

$(C_6H_3(OH)COOH)_2S_2$, is a proposed substitute for salicylic acid. It is prepared by heating sulphur chloride with salicylic acid, dissolving



the melt in caustic soda, and reprecipitating the acid with hydrochloric acid. It occurs as a light yellow powder, easily soluble in alcohol,

benzole, and glacial acetic acid. It is said to be more powerful than sodium salicylate, and does not produce the objectionable symptoms of the latter. It is a prompt, reliable, and agreeable antirheumatic, also an antiseptic. The sodium salt is principally used under the name "dithiosalicylate of sodium II."

REFERENCE.—"Therap. Gaz.," July 15, 1895.

DIURETIN.

Dr. Theodore Zangger[1] has employed diuretin on a large scale in doses of 4, 5 and 6 grammes (from 60 to 90 grains). He considers that it is a valuable and powerful diuretic. The quantity of urine excreted after two or three days' treatment rose from 2 to 3 litres a day. **Dropsical Effusions** were rapidly absorbed, and the **Dyspnœa of Cardiac Mischief** was promptly relieved.

Askanazy,[2] of Königsberg, treated with diuretin thirteen cases of **Chronic Nephritis**, and many chronic cardiac cases. In the cardiac cases the author prescribed the drug in doses of from 3 to 4 grammes (45 to 60 grains) in the twenty-four hours, but in very marked cases of renal inadequacy the dose was raised to 7 grammes (105 grains). Patients who previously had been subject to paroxysms, recurring every hour or even oftener, usually experienced almost immediate relief.

He arrives at the following conclusions :—

(1,) It is a valuable and reliable diuretic in diseases of the heart and blood-vessels, and, to a less degree, in chronic nephritis.

(2,) It is of great service, its effects being prompt and fairly uniform, in the treatment of cardiac asthma, angina pectoris and chronic cardiac dyspnœa, whether from aortic disease or chronic nephritis.

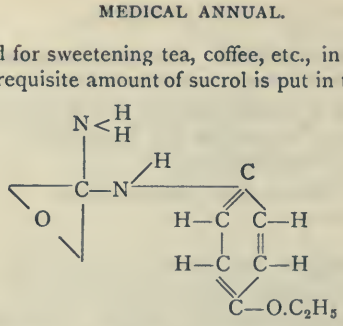
(3,) The average daily dose is from 3 to 4 grammes (45 to 60 grains), larger doses occasionally determining symptoms of prostration.

REFERENCES.—[1] "Correspondenz-Blatt für schweizer Aerzte," 1895, No. xx ; [2] "Archiv für klin. med.," Dec. 13, 1895.

DULCINE, or SUCROL—

$C_9H_{12}N_2O_2$.—This compound is really on the border line between the open-chain and closed-chain groups. It is obtained from paraphenetidine by the action of carbon oxychloride. It is best adapted for its use in a fine crystalline form. It melts at 160° C. ; it is soluble in alcohol, ether, hydrochloric acid, and acetic acid ; 100 cubic centimètres of water at 20° C. dissolve ·16 gramme ; at 80° C., ·65 gramme. It has two hundred times the sweetening power of cane-sugar. Since there is some difficulty in moistening the powdered

sucrol, it is used for sweetening tea, coffee, etc., in the form of minute crystals. The requisite amount of sucrol is put in the cup and the hot



liquid poured over it. It will not disguise the bitter taste of drugs. Sucrol has been proclaimed therapeutically harmless.

REFERENCE.—"Therap. Gaz.," July 15, 1895.

EUCASIN.

Salkowski[1] describes this new casein preparation. He first refers to his own researches and to those of Zuntz and Potthast, in which casein has has been shown to have the same nutritive value as albumen. As casein in powder has many disadvantages, the author proposed a solution in sodic phosphate, but a preparation is needed which is soluble in water, and which in the form of a powder can be shaken up in soup without further preparation. It must have a pleasant taste, and the casein must not be precipitated easily from its solution. The author has carried out a number of experiments on animals, which show the nutritive value of eucasin, and he compares it with somatose. The defective absorption of somatose and its liability to induce diarrhœal stools limits its value as an effective nutritive agent. In comparatively large quantities somatose is of value, perhaps through improving the appetite. After a loss of weight had been induced in a dog by feeding it on somatose, eucasin was given, with a speedy recovery of weight. The author concludes that eucasin is an albuminous preparation well worthy of a further trial for feeding purposes. It can be mixed with carbo-hydrate soups or with broth. It can also be used with cacao and chocolate. Wine and beer should not be employed, as eucasin is least soluble in them.

REFERENCE.—[1] "Deut. med. Woch.," April 9, 1896.

EUDOXINE.

Eudoxine, a bismuth salt containing iodine and phenol, occurs as a brownish-red powder without odour, and is insoluble in water. It is, however, distinguished from the other salts of bismuth by its solubility in caustic soda solutions, when it gives a blue-violet colour.

Clinically it has been found to be of advantage in **Intestinal Catarrh,** particularly in those cases in which **Tuberculosis** is present.

The dose is 15 grains three times a day, and it does not produce any secondary effects.

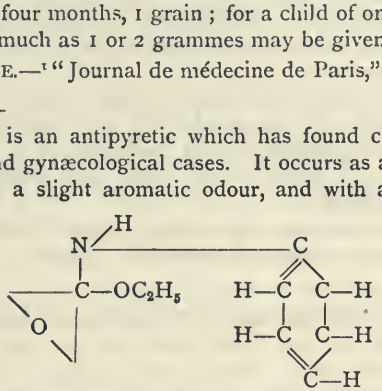
In chronic inflammation of the intestine it exerts a beneficial influence, and it is useful in cases of **Colic with Tympanites, Dyspepsia,** and **Diarrhœa.**

The dose for a child of two months is ½ a grain three times a day; for a child of four months, 1 grain; for a child of one year, 1½ grains; for adults as much as 1 or 2 grammes may be given.

REFERENCE.—[1] "Journal de médecine de Paris," Nov. 24, 1895.

EUPHORIN—

$C_9H_{11}NO_2$, is an antipyretic which has found considerable use in obstetrical and gynæcological cases. It occurs as a white, crystalline powder, with a slight aromatic odour, and with an acrid, clove-like

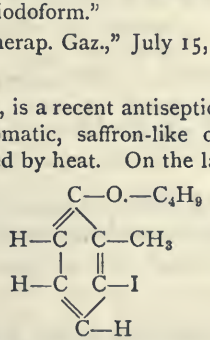


after-taste. It is only slightly soluble in water. It is stated to be equal to twice its weight of antipyrin. It is claimed to have pronounced antiseptic properties. Dr. Bossi states "that it acts both more efficaciously and more rapidly than any other substance hitherto in use, not excepting iodoform."

REFERENCE.—"Therap. Gaz.," July 15, 1895.

EUROPHEN—

$C_6H_3.I.CH_3.O.C_4H_9$, is a recent antiseptic.[1] It is a yellow amorphous powder, with an aromatic, saffron-like odour, insoluble in water and easily decomposed by heat. On the latter account care must be



taken in making up the solutions to keep the solvent (alcohol, etc.) cold, else the compound will decompose, setting iodine free. It is a

powerful rival of iodoform, on account of its far less disagreeable odour and non-toxic property. It contains 27·6 per cent. of iodine.

Saalfeld[2] gives the result of two and a half years' experience of europhen in the treatment of **Skin Diseases.**

As a substitute for iodoform it has distinct advantages: (1,) It does not smell; (2,) It is not poisonous; (3,) It is not irritating to inflamed skin.

Ulcers of the leg, having usually a surrounding eczematous area, do badly with iodoform, which irritates the eczematous skin; whereas europhen soothes the burning and itching of the eczema, and quickly allays the pain of the ulcer.

Intertrigo, which had resisted other remedies, yielded to europhen.

Soft Sores treated with the powder did well, and the number of secondary suppurating **Buboes** seemed diminished by it.

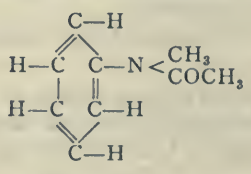
Other conditions in which it was useful were **Pustular Eczema**, **Folliculitis**, and **Impetigo.**

After superficial operations—for example, removal of skin tumours, circumcisions, cauterisations—it proved a valuable substitute for iodoform.

REFERENCES.—[1] "Therap. Gaz.," July 15, 1895; [2] "Therap. Monatsschrift," Nov., 1895.

EXALGIN—

$C_6H_5.N(CH_3).C_2H_3O$, was introduced in 1889 by Dujardin-Beaumetz and Bardet as a substitute for acetanilide. It is produced by acting on mono-methyl aniline with acetyl chloride. It crystallizes from water in spear-like crystals, which are difficultly soluble in cold water,



more readily in hot, easily in dilute and concentrated acetic acid and in alcohol. It melts at 100° C. and boils at 245° C.

REFERENCE.—"Therap. Gaz.," July 15, 1895.

FERRUM.

Dr. J. M. Da Costa[1] has used the citrate of iron and manganese hypodermically in the form of a 20 per cent. solution. The injection was always made with antiseptic precautions. The dose should not

exceed half the dose usually given by the mouth. Iron should not be used in the hypodermic form indiscriminately, but after **Exhausting Discharges** and in profound **Anæmia** it is very useful. The author appends a complete bibliography of the subject.

Dott. Giusto Coronedi[2] believes that other metals than iron may favourably influence general nutrition. Experiments based upon the use of Fleischl's hæmoglobinometer give the following relative value of the metals in their action upon hæmoglobin: Mercury, 17; iron, 13 to 15; copper, 10; manganese, 9; zinc, ?. Mercury, however, because of its poisonous properties, must yield the first place to iron. Copper-hæmol, as prepared under the direction of Kobert, can be administered in pill-form with mucilage, each containing 1½ grains, of which the daily dose is from 3 to 4. In this way an excellent result was obtained without gastric disturbance, in a case of profound anæmia consecutive to severe chronic **Gastritis.**

REFERENCES.—[1] "Therap. Gaz.," May 15, 1896; [2] "La Settimana medica," 1896, No. 1.

FORMALIN.

Mosso and Paoletti[1] have worked out the physiological and toxicological properties of formalin, which is a 40 per cent. solution of formic aldehyde, and has hitherto been used mainly in histology as a fixing agent. They find that 1 part in 20,000 slows the ammoniacal fermentation of urine, and that 1 in 4,000 inhibits it entirely. The bactericidal action of formalin is almost equal to that of corrosive sublimate, while its toxic properties are very much less. It hinders the coagulation of albumen by heat; a very small quantity of formalin so alters proteids as to render them incoagulable. The coagulation of blood is, on the other hand, hastened by formalin; the clot does not contract, as no serum is produced. Intravascular injection profoundly modifies the blood, so that hæmoglobin passes out from the corpuscles into the plasma. The blood-vessels contract when in contact with formalin, their walls being altered, and the corpuscular elements escaping into the tissues; these points were ascertained by experiments on the renal circulation.

Walter[2] states that a solution of formalin, 1 in 10,000, prevents the growth of the bacilli of anthrax, cholera, typhoid, diphtheria, and of the staphylococcus pyogenes aureus. Used in the gaseous form it greatly hinders their growth. In 1 per cent. solution it kills a pure culture of almost any pathogenic micro-organism in thirty minutes. In 3 per cent. solution it kills anthrax bacillus in fifteen minutes, and all other pathogenic micro-organisms in one minute.

Where a weak alcoholic solution instead of an aqueous solution is used the bactericidal effect is even more marked. A 3 per cent. solution, especially with addition of alcohol, used for cleansing the hands, makes them completely sterile; experiments with metal instruments were, however, less successful. Spraying with formalin is an effective means of disinfecting clothes; uniforms and leathern articles can be disinfected completely without damage; the average time required is twenty-four hours, but in some cases it was found that less was sufficient. It can be used also for the disinfection of rooms. Fæces are deodorised almost immediately by a 1 per cent. solution, and are made sterile by a 10 per cent. solution in ten minutes; formalin is thus of great service in **Cholera.** The author has also found it useful in destroying diseased tissues; thus, applied to a **Boil** in more concentrated form it quickly caused sloughing of the diseased tissue. In weak solution it is useful as a preservative.

Dr. C. L. Schleich[3] states that when a watery solution of gelatin is dried after exposure to formalin-vapour, there results a new chemical body possessing entirely new properties. This preparation in contact with animal tissues results in the breaking up of the absorbable gelatin, lasting for several hours, and the gradual setting free of the formalin. In this way the action of the drug is continued over a considerable period of time. The results of the use of this antiseptic in powder form have been that in one hundred and twenty cases of **Acute Purulent Processes,** ninety-three of aseptic healing of wounds, four complicated **Fractures,** and two deep **Wounds** of the scalp, success without exception has been obtained. In all instances of acute suppuration the inflammation has been brought to an end within twenty-four hours, the fractures healed aseptically and without fever, and aseptic operations pursued an uneventful course. In the presence of fresh blood and clean condition of the wound the powder gave rise to a dry and permanent scab. In recent suppuration without necrosis the process was brought to a standstill within twenty-four hours. **Boils, Carbuncles,** and **Phlegmons** can be limited within the same time, if the powder is brought into contact with the tissues.

The process of manufacture is as follows: A pound of dissolved and purified gelatin is brought in contact with 25 drops of a pure solution of formalin. The dried masses are rubbed up or powdered, and preserved dry with the addition of some drops of formalin.

REFERENCES.—[1]"Archiv. Ital. de Biologie," xxiv., 3, and "Brit. Med. Journ.," Feb. 8, 1896; "Medical Annual," 1896, p. 672; [2]"Zeitsch. für Hygiene," April, 1896; [3]"Therapeutische Monatsschrift," 1896, ii, 57.

Formalin as a Sterilizer (for Catheters).

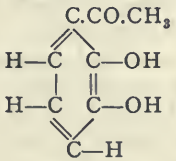
Priestley Leech, M.D., F.R.C.S.

R. W. Frank[1] recommends the sterilisation of catheters by the vapour of **Formalin.** His method is as follows: The catheters are placed in a glass cylinder, the bottom of which is pierced with holes like a sieve. This cylinder is then placed in a vessel which contains formalin. Experiments with catheters infected with different organisms showed perfect sterilisation in twenty-four hours. The sterilisation is permanent if the catheters are kept perfectly dry, and in order to do this Frank keeps them in the glass cylinder in a vessel which contains calcium chloride.

REFERENCES.—[1] "Berlin. klin. Woch.," No. 44, 1895, and "Centralblatt f. Chirurgie," No. 4, 1896.

GALLACETOPHENONE—

$C_6H_2(OH)_3.CO.CH_3$, is a new and promising substitute for pyrogallic acid. It is prepared by heating 1 part of pyrogallic acid, 1½ parts of glacial acetic acid, and 1½ parts of zinc chloride to 156° C. It occurs



in needle-like crystals, melting at 168° C. It is slightly soluble in cold water (·18 part in 100), easily soluble in hot water, alcohol, and ether.

Gallacetophenone, when sold as a dye-stuff under the name *alizarine yellow C*, occurs as a grey paste, containing 20 per cent. of dry colouring matter.

REFERENCE.—"Therap. Gaz.," July 15, 1895.

GUAIAC (Oil of).

Dr. Bellencoutre[1] suggests the use of this new anæsthetic in all operations on the eye and its appendages, excepting those on the cornea and anterior chamber.

The solution he employs is 1 gramme of crystallized guaiac to 10 grammes of sterilized olive oil.

He introduces the needle of a hypodermic syringe into the part to be operated on, and while slowly withdrawing it deposits 2 or 3 drops of the solution into the tissue.

Anæsthesia is produced in eight or ten minutes, and is continued twenty-five minutes.

REFERENCE.—[1] "Journ. de méd. de Paris," Dec. 22, 1895.

HÆMOSTATICS. *Priestley Leech, M.D., F.R.C.S.*

Rugh[1] recommends a 10 per cent. aqueous solution of **Alumnol** (*q.v.*) as a hæmostatic after operations on, or traumatism to, the nose and throat. It does not form an objectionable magma with the blood, nor does it injure the mucous membrane of the nose and throat.

Antipyrine has, according to Henocque,[2] a most powerful hæmostatic action. It causes vaso-constriction and retraction of the tissues with formation of a minute clot which is extremely retractile and aseptic. It has also a favourable action on cicatrization.

Dr. Roswell Park[3] had recommended the same substance as a hæmostatic, but he has evidently discovered[4] a more important styptic in a combination of **Antipyrin with Tannic Acid.** He has used a 5 per cent. solution of antipyrin in hæmorrhage from the urethra, bladder, or eye. He found by accident that a mixture of antipyrin in an alcoholic solution of tannin produced a gummy mass at first flocculent, but which quickly cohered and formed a material of great stickiness and adhesiveness. The two substances may be used in any proportions, and the resulting gummy mass may be used for bleeding bone, etc. It is so remarkably cohesive that some difficulty may occur in removing it, unless granulations have formed and loosened it.

Prof. W. F. Snegirew,[5] of Moscow, reports the successful use of **Steam** as a hæmostatic. He had used it in uterine cases as an internal application; an application of half a minute to a minute has entirely relieved many cases of tender, painful bleeding conditions of the uterine mucosa. With Dr. Blagewolin he instituted a series of experiments on animals with the following results: removal of pieces of liver, spleen, lung, kidneys, etc., with no bleeding. The wounds healed by primary intention. As a result of these experiments steam has been used as a hæmostatic in the Alexiner Semstwo Hospital with success in the following operations: (1,) In five cases of resection of the knee without elastic bands, ligatures, or artery forceps; (2,) In extirpation of a cancerous breast and malignant new growths in the skin; (3,) In amputation of cervix uteri and in fibro-myotomy; (4,) In resection of bones and removal of sequestra; (5,) In abscesses to render them odourless and induce rapid healing; (6,) In fistula and sinuses, especially when tuberculous.

Hind[6] reports a case of hæmorrhage after extraction of a tooth. Perchloride of iron had been tried in vain, and he applied ethyl chloride spray after clearing out the clots. A piece of absorbent cotton soaked in **Tincture of Hamamelis** was then applied and the bleeding permanently ceased.

A. E. Wright[7] in an article says that hæmorrhage, in hæmophilics,

may be controlled in three ways: (1,) By means of calcium chloride (10 to 15 minims of the liq. calci. chlor. B.P.); (2,) By the inhalation of carbonic acid; (3,) By the local application of the cell nucleo-albumins. These latter may be prepared by mincing up thymus gland, the testicle, or a piece of gastric mucous membrane in a little (1 in 500) sodium carbonate solution.

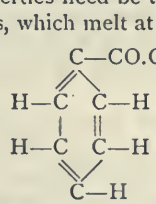
Dr. Jaworski[8] has also used steam as a hæmostatic in resection of the knee, amputation of the breast, amputation of the cervix uteri and to the uterine cavity. He is satisfied with its cauterizing, anæsthetic, deodorizing, hæmostatic, disinfecting and aseptic properties.

The method of using the steam in the uterine cavity is as follows: After the uterus is dilated a fenestrated catheter is introduced into its cavity. In the lumen of the catheter a smaller tube passes which is connected with a steam boiler. The steam has a temperature of 100° C.

REFERENCES.—[1] "Med. Record," Nov. 25, 1895; [2] Ibid., Nov. 9, 1895; [3] "Med. News," Dec. 15 and 22, 1894; [4] Ibid., Nov. 16, 1895; [5] "Indian Med. Chir. Rev.," Oct. 1895; [6] "Lancet," Jan. 25, 1896; [7] Ibid., Jan. 18, 1896; [8] "Wiener medizin. Presse," No. 3, 1895.

HYPNONE, or ACETOPHENONE—

$C_6H_5.CO.CH_3$, is a comparatively old preparation, and little more than its chemical properties need be touched upon. It crystallizes in large laminæ or plates, which melt at 20·5° C. Liquid hypnone is a



colourless, mobile, very refrangent liquid, possessing an odour of bitter almonds. Its specific gravity is 1·032. It is insoluble in water, sparingly soluble in glycerin, freely soluble in alcohol, ether, chloroform, benzole, and the fixed oils.

REFERENCE.—"Therap. Gaz.," July 15, 1895.

INJECTIONS (Sub-conjunctival).

G. E. de Schweinitz, M.D.
Clarence A. Veasey, M.D. } *Philadelphia.*

Reports during the year concerning the employment of sub-conjunctival injections of *mercuric chloride* seem to show that in those cases in which benefit was derived from their administration the good results were due, not to the mercurial salt itself, but to the unblocking

of the engorged lymphatics by the solution. Sub-conjunctival injections of solutions of *sodium chloride* produce equally as good results as do similar injections of mercuric chloride and without any of the ill effects of the latter, such as the gluing of the conjunctiva to the sclera, or the production of pain.

As to the affections benefited by these injections there is still some difference of opinion. Practically all who have employed the method agree that it is of great value in the treatment of **Acute Iritis** and **Episcleritis.** Personal experience has shown that nothing relieves the severe pain of acute iritis, whether specific or not, more quickly than sub-conjunctival injections of the solutions of sodium chloride, and by accelerating the flow of lymph they also hasten the reparative process.

Though many have recorded cases of **Infected Corneal Ulcers** and of **Interstitial Keratitis** that have gotten well from the use of the injections, our experience with their use in such affections of the cornea have not been so encouraging. Some of our cases have shown slight improvement, but hardly more than would have resulted from other methods of treatment, while others have not only not improved but grown so much worse that the injections had to be discontinued. In cases of **Infected Wounds of the Eyeball** and **Orbital Cellulitis,** Seggel[1] has found the injections of mercurial solutions of the greatest benefit; while Abadie, Darier and others find them the most satisfactory means of treating acute inflammatory affections of the posterior uveal tract.

Attention has been directed to the fact[2] that injections of the salt solution is the best and quickest means of clearing up a **Sub-conjunctival Hæmorrhage.**

Geering,[3] of Basel, in a number of experiments upon animals' eyes, has shown by sections and photo-micrographs that in almost all eyes that have received sub-conjunctival injections of mercuric chloride there remains a greater or lesser number of inflammatory adhesions between the periphery of the iris and the cornea, in the region of the filtration angle of the anterior chamber. In no case did he succeed in producing a glaucoma, but it is a possibility worth bearing in mind when employing this method of ocular therapeutics.

REFERENCES.—[1] "Brit. Med. Jour.," Jan. 25, 1896; [2] "Amer. Journ. of Ophthalmology," Sept. 1896; [3] "Ueber den Einfluss subconjunctivaler Sublimat-Injectionen auf das Verhalten des vordern Kammerwinkels," Basel, 1896.

IODINE SALTS.

Dr. Ruheman,[1] of Berlin, finds that iodic acid combinations with metals and with alkaloids possess a remarkable therapeutic value. This is especially the case with the iodates of silver, lithium, oxide of

mercury, strychnia, codeia, hyoscine, and atropine. The first of these salts is insoluble in water, but all the others are soluble, and can be employed hypodermically.

Iodate of silver administered internally is an astringent and intestinal antiseptic. It does not interfere with the digestive functions. The dose is 0·005 to 0·01 gramme.

Iodate of lithium is useful administered hypodermically in doses of 0·1 gramme in cases of **Uric-acid Diathesis** and **Nephritic Colic.** It can be given in the form of pills, each containing 0·15 to 0·20 gramme.

The *iodate of mercury* dissolves readily in water when iodide of potassium is present. The stability of the preparation is, however, uncertain. It is useful—in the form of hypodermic injections—in **Syphilis.** The solution is made by dissolving 0·115 gramme of oxide of mercury and 0·08 gramme of iodide of potassium in 10 grammes of distilled water, so that a Pravaz syringeful contains about 0·01 gramme, or $\frac{1}{7}$ of a grain of the mercury salt. The injections are painful and are only administered every second or third day. The total number required for a complete cure is usually twenty, though occasionally thirty are needed. The drug thus given was well borne, and appeared to have less tendency than other mercurial preparations to excite stomatitis or kidney trouble.

Iodate of quinine may be administered either by the mouth or hypodermically in doses of from 0·05 to 0·1 gramme, and produces neurotonic and anti-neuralgic effects. When given hypodermically but little pain is occasioned, and abscesses are never formed.

Iodate of strychnine should not be given hypodermically in doses exceeding 0·006 gramme.

Iodate of codeine is a more efficient sedative and analgesic than the other salts of this alkaloid. In hypodermic doses of from 0·03 to 0·05 it is useful in **Neuralgia** and **Convulsive Cough,** and as a substitute for morphine in the treatment of persons who have contracted the **Morphine Habit.**

Iodate of hyoscine has two or three times the therapeutic effect of the hydrochlorate, the iodide, or the bromide, so that the maximum dose may be considered as 0·0005 gramme for internal use and 0·0002 gramme for hypodermic use ; half this last dose is usually sufficient to produce all the effect required. In ophthalmic practice a solution of the strength of 0·05 or 0·06 per cent. may be used as a mydriatic in **Iritis** and **Keratitis** ; it acts more quickly than other preparations of hyoscine and does not set up any irritation.

Iodate of atropine in a solution of the strength of 0·5 to 1·5 per

cent. is an excellent mydriatic, the dilatation it produces coming on more rapidly and disappearing earlier than that caused by other salts of atropine. Another advantage this solution of iodate of atropine has is that it remains sterile for a long time, and does not require other antiseptic substances to be added to it.

REFERENCE.—[1] "Lancet," Oct. 26, 1895.

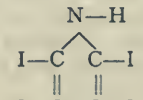
IODOFORMIN.

Iodoformin fulfils the condition of an odourless compound which yet contains the iodoform molecule unaltered, in the proportion of 75 per cent. It is a fine white powder, turning yellow by exposure to light. In presence of acid or alkaline fluids iodoform is liberated. The powder is absolutely unirritating.

REFERENCE.—"Therap. Monatsschrift," Sep., 1895.

IODOL—

C_4I_4NH, is a comparatively old preparation, made by precipitating pyrrol with a potassium iodide solution of iodine. It is a tasteless, pale yellow, crystalline powder, nearly odourless, and decomposed by



heat with the evolution of iodine, leaving a bulky charcoal as a residue. It is almost insoluble in water (1 to 5000), easily soluble in alcohol (1 to 3), ether (1 to 1), and chloroform. It contains 88·9 per cent. of iodine. It is an iodoform substitute.

Iodol can be recognized by the green colour of its solution in sulphuric acid, and by the bright-red colour produced when an alcoholic solution is warmed with nitric acid.

REFERENCE.—"Therap. Gaz.," July 15, 1895.

IODOPYRIN—

Is similar to phenazon therapeutically, but possesses the advantage of the iodine. It occurs in colourless, silky, needle-like crystals, slightly soluble in cold water.

REFERENCE.—"Therap. Gaz.," July 15, 1895.

IPECACUANHA.

Dr. Robert B. Wild[1] found experimentally that both cephaëline and emetine possessed a powerful emetic action; the emetic dose of the latter was, however, about double that of the former. In non-emetic doses the degree of nausea produced by cephaëline was also about

double that produced by emetine—*e.g.*, the intensity and duration of the nausea following 5 milligrammes of cephaëline was much the same as that following 10 milligrammes of emetine. Both alkaloids lowered the arterial tension, and little difference was apparent in small doses, but the depression produced by the emetic dose of cephaëline was less than that produced by the larger emetic dose of emetine; cephaëline appeared, therefore, to be distinctly preferable where a non-depressing emetic was desired. Both alkaloids caused contraction of the blood-vessels after destruction of the brain and spinal cord, but emetine was distinctly more active than cephaëline: 1 in 10,000 of the latter produced little if any effect, while 1 in 20,000 of emetine was followed by marked contraction. On the heart no appreciable difference could be made out; both produced slowing, weakening, and diastolic arrest of the isolated organ; recovery was easily effected when the poison was removed. It is doubtful whether the drugs in the doses administered to men would affect the heart directly; but the fact that 1 in 20,000 caused diastolic arrest in forty-six minutes renders caution necessary in giving larger doses of the alkaloids. Both acted as muscle poisons, but cephæline had the greater toxic power, and also caused irritation of the motor nerve endings and contracture. On the secretions, salivation was well marked wherever there was nausea. Emetine caused a flow of watery mucus from the nasal mucous membrane when a full dose was given; this was not noticed after cephaëline. It is possible that the expectorant action of ipecacuanha is due to a similar action of emetine upon the other portions of the respiratory mucous membrane. Intestinal peristalsis and a loose motion at times followed the administration of either alkaloid; there was never any marked purgation. No effect was noticed upon the secretion of the skin or upon the amount of urine.

Assuming the view that emetine is methylcephaëline to be correct, it would seem that the chief effect of the addition of the CH_2 group was markedly to reduce the action of the compound upon the convulsive or vomiting centre in the medulla oblongata, and also to diminish the irritating effect upon motor nerve endings. The methyl compound had, on the other hand, a more powerful action as a local vaso-constrictor. The addition of the methyl group did not appear to affect the other actions of the alkaloid. With regard to therapeutic use, only accumulated clinical experience can determine their relative positions. It seems probable that in cephaëline we have a powerful and certain emetic, singularly free from depressing effects when given in doses of from 5 to 10 milligrammes (from $\frac{1}{12}$ to $\frac{1}{6}$

of a grain); its action, however, is too slow to prove of much service in cases of poisoning, but in all other cases where emesis is desired it appears well worthy of trial. In acute catarrhal and febrile conditions, as an expectorant and for all the uses of ipecacuanha where vomiting is not desired, emetine in small doses seems likely to prove of considerable value, and also as an emetic in larger doses of from 10 to 20 milligrammes (from $\frac{1}{6}$ to $\frac{1}{3}$ of a grain) when a more depressing action is required. The powerful local constricting effect upon blood-vessels may also prove useful in hyperæmic and inflammatory conditions.

REFERENCE.—"Lancet," Nov. 23, 1895.

LITHIUM.

Mendelsohn[1] points out that if a remedy is to act efficiently it must be administered in a form in which it can be absorbed. Lithium carbonate is an almost insoluble body. It must be given in carbonic acid water so as to convert it into a soluble bicarbonate. When administered alone it is changed by the action of the hydrochloric acid in the stomach into a chloride which is absorbed to only a limited extent. Of the lithium salts the chloride is least able to combine with uric acid, and to produce a soluble salt which may lead to the elimination of the uric acid. Thus the preference given to this lithium salt is not well-founded. It is admitted that the treatment which aims at bringing about a solution with elimination of the uric acid deposited in the tissues is not altogether satisfactory. It would appear that the increased diuresis has much to do with the benefit obtained in these cases.

By a series of experiments on animals the author has established the diuretic action of the lithium salts. An acetate of lithium was used in these observations. When administered either subcutaneously or by the mouth an increased diuresis was noted. In a few minutes after the administration of the lithium salts their presence in the urine could be demonstrated.

Of all the lithium the citrate has the most marked diuretic action. Investigations carried out on healthy individuals as well as on those suffering from various manifestations of the **Uric Acid Diathesis** showed that diuresis was also produced in man by the lithium salts.

REFERENCE.—[1]"Deut. med. Woch." Oct. 10, 1895.

LORETIN.

Dr. Herbert Snow[1] calls attention to the value of loretin as an antiseptic. It is a bright yellow odourless crystalline powder, very slightly soluble in water and alcohol; cold water takes up 1 to 2 parts

per 1000, boiling water 5 to 6 ; it is insoluble in ether and oils, forms emulsions with the latter and with collodion. It forms neutral salts with sodium and potassium, with ammonium and magnesium, which are readily soluble in water, forming solutions of a deep orange-yellow colour.

Loretin is used as a dusting powder, either alone or mixed with calcined magnesia, starch, or French chalk. Dusted on the skin, or over a granulated wound, it causes not the slightest irritation or unpleasant sensation. It immediately destroys the malodour of the most fœtid **Cancerous Sore,** controlling this in a manner which no other agent will do. Copiously puffed with an insufflator into the deep cavity formed by evacuating the axilla of **Carcinomatous Glands,** it precludes suppuration, even when free hæmorrhage has taken place after the closing of the wound. When there is no deep cavity a wound dusted with loretin heals rapidly by first intention.

REFERENCES.—[1] "Brit. Med. Journ.," Dec. 21, 1895, and "Medical Annual," 1896, p. 673.

LYCETAL.

Dr. W. E. Anthony[1] claims that this drug, which is dimethyl-piperazine tartrate, possesses advantages, as a solvent of uric acid, over the alkaline salts of lithium, sodium, and potassium in its power of dissolving not only the outer layers of uric acid, but in disintegrating and removing the albuminous nucleus. It is more diuretic than is piperazine, because the tartaric acid in the system is converted into a carbonate and renders the blood more alkaline. The amount employed is from 15 to 45 grains in aqueous solution, which is of an agreeable acid taste, and its prolonged use does not excite repugnance. Six cases are reported.

REFERENCE.—[1] "New England Medical Monthly," 1895, No. 9, p. 417.

MERCURY OXYCYANIDE.

Monod and Macaigne[1] find that the antiseptic power of a 1 in 200 solution of mercury oxycyanide is equal to, if not greater than that of a 1 in 1000 solution of corrosive sublimate. From the results obtained in upwards of four years of hospital and private practice, the authors have come to the conclusion that mercury oxycyanide may be advantageously substituted for mercuric chloride in surgical practice.

In accord with Tarnier and Vignal, they have found that the 1 in 200 solution of mercury oxycyanide prevents cultures from developing, kills the microbes already developed by culture, and sterilizes an infected body. To strengthen the evidence, they have been careful

not to employ in their experiments pure cultures of streptococci or staphylococci devoid of spores, and consequently presenting but a feeble resistance, but dust from hospital wards, containing various microbes, such as the bacillus pyocyaneus, streptococci, the bacillus coli communis, and particularly a microbe resembling the bacillus anthracis and provided with spores which resist a temperature of 212° F. The authors claim to have never met with symptoms of serious intoxication from the solution referred to. It should, however, not be employed for irrigation when there is reason to fear that the injected liquid may be retained. The fact that mercury oxycyanide does not attack steel instruments is also of great practical importance, seeing that it thus becomes possible to employ a single antiseptic agent for all purposes in the course of an operation.

REFERENCE.—[1] "La Semaine médicale," Jan. 4, 1896.

METHACETIN—

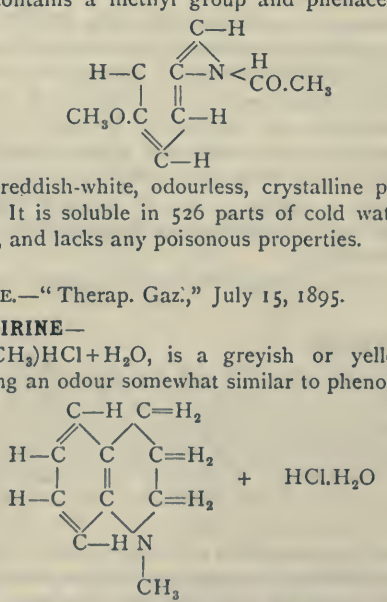
$C_6H_4.(OCH_3).NH.C_2H_3O$, was a short time back pronounced as the successor of phenacetin, which compound it very closely resembles. Methacetin contains a methyl group and phenacetin an ethyl. It

occurs in a reddish-white, odourless, crystalline powder, having a bitter taste. It is soluble in 526 parts of cold water or 12 parts of boiling water, and lacks any poisonous properties. Its melting-point is 127° C.

REFERENCE.—"Therap. Gaz.," July 15, 1895.

METHYL KAIRINE—

$C_9H_{10}NO(CH_3)HCl+H_2O$, is a greyish or yellowish crystalline powder, having an odour somewhat similar to phenol, and a salty and



slightly aromatic taste. It is difficultly soluble in cold water, more

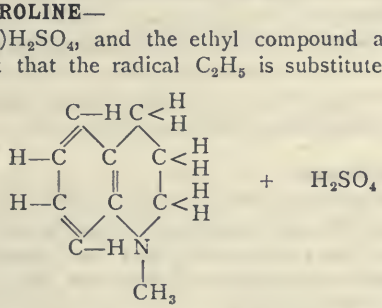
readily in hot; difficultly soluble in alcohol, and practically insoluble in ether, chloroform, and carbon disulphide. It melts at 110° C. It has been replaced by antipyrin and other later remedies.

The ethyl kairine is analogous to the methyl product.

REFERENCE.—"Therap. Gaz.," July 15, 1895.

METHYL KAIROLINE—

$C_9H_{10}N(CH_3)H_2SO_4$, and the ethyl compound analogous to the former, except that the radical C_2H_5 is substituted for CH_3, were

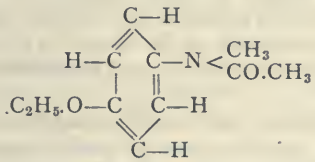


at one time proposed as antipyretics, but, since their action is slow, have been discarded.

REFERENCE.—"Therap. Gaz.," July 15, 1895.

METHYL PHENACETIN—

$C_6H_4(O.C_2H_5).N(CH_2).C_2H_3O$, is a patented preparation. When purified by recrystallization from alcohol or ether, it is a colourless



crystalline body, which melts at 40° C., and is moderately soluble in water and easily in alcohol and ether. Very little is yet known of its therapeutic action.

The following tests serve for the identification of phenacetin :—

(1,) Boil with hydrochloric acid; dilute the solution with water; cool, and filter from the reprecipitated crystals; 2 or 3 drops of potassium bichromate added to the filtrate will produce a ruby-red colour.

(2,) Boil with water; cool and filter; add bromine water until a yellow colour is produced; the solution should remain clear if the sample be unadulterated.

(3,) Boil with hydrochloric acid and ferric chloride ; a red colour is produced.

(4,) Boil with 10 to 20 per cent. nitric acid, bright yellow crystals of the nitro-derivative separate out and the liquid becomes orange.

(5,) Heat with alcohol and sulphuric acid, ethyl acetate will be evolved ; heat the solution with potash and chloroform to obtain the carbylamine reaction.

(6,) Boil with potash, alcohol will be evolved (distinction from acetanilide).

REFERENCES.—[1]Platt, "Journ. of Anal. and App. Chemistry," 1893, pp. 77-83, and "Therap. Gaz.," July 15, 1895.

METHYL (Salicylate of).

The facility with which the skin can absorb guaiacol has been shown to be very considerable, so that after painting the surface with this substance no less than 45 grains of it have been recovered from the urine, a much larger dose than could have been introduced into the system by means of the stomach.

This fact led MM. Linossier and Lannois[1] of Lyons to try the effect of administering an anti-rheumatic drug—salicylate of methyl, the substance which forms $\frac{9}{10}$ of the ordinary wintergreen oil—in a similar manner. It becomes transformed into salicylate of sodium in the blood and is eliminated by the urine in the form of salicylic acid. It can also be detected in considerable quantity in the fæces. The daily elimination takes place in a regular manner during the course of treatment, and no effect is produced on the skin by the applications. When 60 grains were painted on the surface of the thigh, as much as 20 grains of salicylic acid were recovered from the urine within twenty-four hours.

Like guaiacol, salicylate of methyl is absorbed by the cutaneous surface in a state of vapour, as can be readily shown by surrounding the limb with a cylinder of wire gauze. The method of application is very simple : the liquid is spread on the limb by means of a brush with or without the aid of a medicine dropper ; the part is then covered with a layer of oiled silk or other impermeable tissue, over which cotton wool is fastened, and the whole left undisturbed for four-and-twenty hours. In this way 60 grains can be readily applied, but if a larger dose is desired some lint is rolled round the limb, which becomes saturated with it. The absorption appears to be retarded by mixing lard or vaseline with the salicylate of methyl.

The great advantage of administering medicines by the skin is that there is less risk of disordering the stomach than is the case when

they are introduced into that organ, but it is only possible to employ this method in the case of drugs that are of a decidedly volatile nature.

The following is Dr. Murrell's[2] external treatment of **Gout** founded on the above observations: Take ½ an ounce of iodide of potassium, dissolve it in ½ a pint of rectified spirit—methylated spirit is used in hospital practice—add 1 ounce of soap liniment, and then ½ a drachm each of oil of cajuput and oil of cloves. A piece of lint is soaked in this mixture, wrapped round the affected part, covered with protective and kept in place by a bandage. It acts as a powerful counter-irritant, and the inflammation usually subsides in from twelve to twenty-four hours.

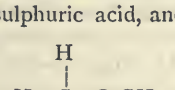
In addition the author frequently gives a drachm of colchicum wine with 10 grains of iodide of potassium three times a day. These large doses of colchicum wine induce brisk purgation, sometimes accompanied by vomiting, but they speedily cut short the attack. This mode of treatment is especially useful in the case of robust, full bodied men in active employment, to whom the loss of a day's work is a serious consideration.

In **Sciatica, Lumbago**, and **Rheumatism** affecting one joint the local application of a liniment containing ½ an ounce of salicylate of sodium, ½ a drachm of oil of cajuput, 15 minims of oil of eucalyptus, and ½ an ounce of soap liniment in 6 ounces of rectified spirit affords prompt relief.

REFERENCES.—[1] "Lancet," April 4, 1896; [2] "Quart. Therap. Review," July, 1896.

METHYLAL, or FORMAL—

$C_3H_8O_2$, is obtained by the oxidation of methyl alcohol with manganese dioxide and sulphuric acid, and distilling the product of



the reaction. It is a colourless, ethereal liquid, of specific gravity ·855, and boils at 42° C. It is miscible with alcohol and ether, and dissolves in 3 parts of water. Its odour resembles chloroform and acetic ether. It is used as an hypnotic, but, since the patient becomes rapidly used to it, it must be used in increasing doses. It is also employed as a local anæsthetic, nerve sedative, and anodyne.

REFERENCE.—"Therap. Gaz.," July 15, 1895.

MUSTARD.

Roswell Park[1] calls attention to the value of mustard as a disinfectant. His custom is to scrub his hands thoroughly with a mixture of soap, corn meal, and mustard flour, using this for five minutes. After rubbing it thoroughly into all the crevices and creases of the hands and nails by aid of a nail brush, his hands are sterilized, no matter what he may have been doing previously. Used as indicated the mustard leaves no unpleasant sensation; and by the time it produces unpleasant tingling or rubefaction of the skin its essential oil has done its desired work as an antiseptic. Mustard is an admirable deodorising agent, and will take away from the hands all offensive odour of dead or dying tissues, and all redolence of iodoform.

REFERENCES.—[1] "Medical News," Dec., 1894, Nov., 16, 1895, and "Brit. Med. Journ.," Dec. 21, 1895.

NAJA TRIPUDIANS. (See "Serpent Venom, p. 67.")

NITRO-GLYCERINE.

Dr. Bradbury[1] in the Bradshaw Lecture on vaso-dilators pointed out that the vaso-dilating action of the nitrates and of nitro-glycerine had long been known. He had made observations with other members of the group with the view of discovering a drug having a more prolonged though less powerful effect. As all the alcoholic nitrates previously examined had been found to be vaso-dilators, and as the only multivalent nitrate used, viz., nitro-glycerine, has a powerful influence in this direction, it seemed not improbable that the drug in quest might be found among the nitrate derivatives of the higher-valent alcohols or their allies. The nitrates of erythrol, mannitol, and some of the sugars were therefore examined; later the series was extended.

Chemically, nitrates consist of an NO_2 group united to a radicle by a bond of O, thus $R.O.NO_2$. True nitro-bodies on the other hand consist of an NO_2 group united to a radicle by the N atom directly—*i.e.*, without the intervention of an O atom—*e.g.*, $R.NO_2$.

All the substances experimented with were obtained by nitrating the alcohols or corresponding compounds by means of a mixture of nitric and sulphuric acids at a low temperature. The product obtained was well washed with water and dilute alkaline solution until free from acid, and was subsequently dried. The solid nitrates were afterwards crystallized from ethylic alcohol or ether. From the alcohols the following series was prepared :—

Methyl nitrate	$CH_3.ONO_2$	... B.P. 65°C.
Glycol (ethylene) di-nitrate ...	$\left\{\begin{array}{l}CH_2.ONO_2\\ \quad\vert\\ CH_2.ONO_2\end{array}\right\}$	... —

Glycerol tri-nitrate (nitro-glycerine) $\left\{\begin{matrix}CH_2.ONO_2\\|\\CH.ONO_2\\|\\CH_2.ONO_2\end{matrix}\right\}$ ... M.P.—20°C.

Erythrol tetra-nitrate ... ... $\left\{\begin{matrix}CH_2.ONO_2\\|\\(CH.ONO_2)_2\\|\\CH_2.ONO_2\end{matrix}\right\}$ ... M.P. 61°C.

(Arabinal penta-nitrate) ... ... — ... —

Mannitol hexa-nitrate ... ... $\left\{\begin{matrix}CH_2.ONO_2\\|\\(CH.ONO_2)_4\\|\\CH_2.ONO_2\end{matrix}\right\}$ ... M.P. 113°C.

After describing the physiological effects of these compounds the author says, "Reviewing therefore the action of these compounds upon the vascular system in regard to their practical application to the treatment of disease, we may discard methyl nitrate as being the least likely to prove of clinical value. Glycol di-nitrate, again, is so similar in action to nitro-glycerine, and, at the same time, is so much more expensive, that it also is not likely to enter into our stock of remedies. The longer acting nitrates, however, may prove of value. They are indicated in conditions where the heart is labouring under the increased work imposed upon it.

The dose of the solid organic nitrates may be taken as 1 grain; more may be given if it is thought necessary, but usually this amount will suffice. They may be taken in the form of pills, or in alcoholic solution. A solution of erythrol nitrate in the strength of 1 in 60 may be made, and 1 drachm may be taken in an ounce of water when necessary. Mannitol nitrate is not quite so soluble, but a 1 per cent. alcoholic solution can be prepared, of which 1½ or 2 drachms may be taken in water. The solutions thus made are stable and free from irritating properties.

The only condition in which these nitrates will be of benefit is, viz., high arterial tension. Whenever we wish to keep down the blood pressure for a length of time these nitrates will be of value. It may be that the therapeutics of the drug will widen with our increasing knowledge, it may be that the limits laid out for them will be much diminished.

Although no evil effects have followed the administration of these

drugs, and though no such effects are anticipated, the research on these compounds is not yet complete.

Dr. John Ogle[2] seeks to gather experience with respect to the dosology of some of the vaso-motor dilators. With reference to nitro-glycerine he finds that the dose given in the British Pharmacopœia is 1 or 2 tablets of grain $\frac{1}{100}$ each, whilst in the Extra Pharmacopœia it is stated that the tablets are not poisonous to children and that on one occasion two children, one three and the other six years old, ate straight away two dozen nitro-glycerine tablets without being any the worse for it.

Dr. Murrell[3] in reply to Dr. John Ogle thinks that the initial mistake was to attach any importance to the British Pharmacopœia. He points out that no one regards that periodical as an authority on such subjects. In the preface to that compilation we are told that the doses indicated are not authoritatively enjoined, and that "the practitioner must rely on his own judgment and act on his own responsibility in graduating the doses of any therapeutic agents which he may wish to administer to his patients." Dr. Murrell says, "In the case of nitro-glycerine and other vaso-motor dilators we aim not so much at giving a certain dose as at producing a definite pharmacological action. There are two points to be taken into consideration: first the idiosyncrasy or susceptibility of the patient, and, secondly, the rapidity with which tolerance can be established. Taking the two extremes, I have known the characteristic nitro-glycerine headache produced by $\frac{1}{100}$th of a grain of the drug, whilst, on the other hand, I have given 4·8 grains a day without inconvenience. A patient of mine took 1767 grains of the pure drug in one hundred and two weeks, and another patient practically lived on it for three years. Women are as a rule more susceptible to the action of the drug than are men. I made some observations on women not suffering from angina pectoris with the view of determining their dose. I found that 10 per cent. complained of the medicine when minim doses of the 1 per cent. solution were given, that on increasing the dose to 2 minims 32 per cent. complained, and that more than half suffered from headache after taking 3 minims. My rule is to begin with $\frac{1}{100}$th of a grain in the case of women and $\frac{1}{200}$th of a grain in the case of men, and to run up the dose until the patient is taking a grain three or four times a day. In cases of **Angina Pectoris** I always give the 1 per cent. solution and order the dose to be made up to a drachm with tincture of capsicum, spirits of chloroform, and peppermint water. The patient, for emergency work, carries a small bottle of this in each waistcoat pocket, as it is found by experience that the drug is absorbed

much more rapidly when it is kept warm. I do not believe in the lethal action of the members of this group. In the only fatal case on record of poisoning by nitro-glycerine the patient took an ounce of the pure drug and even then did not die for four hours. A short time since a patient of mine swallowed a mouthful of nitrite of amyl in mistake for a cough linctus and experienced no inconvenience. There seems to be no particular reason why children should not be given nitro-glycerine tabellæ supposing that the ordinary chocolate drops are not available."

REFERENCES.—[1] "Lancet,' Nov. 16, 1895; [2] Ibid, Aug. 22, 1896; [3] Ibid, Aug. 29, 1896.

OVARY (Extract of).

Mond has used this substance in the treatment of cases where symptoms were due to **Amenorrhœa,** arising spontaneously or artificially, induced by operation. The extract was obtained from the whole ovary, or by precipitating the contents of the follicles. No definite conclusions as regards results can yet be made. The cases for which the treatment was adapted were those in which the internal generative organs had been removed either partially or entirely, and in cases in which the symptoms were due to the climacteric, in amenorrhœa due to atrophy of the generative organs, and in one case of rudimentary uterus, etc. The author sets forth the cases and the results obtained in tabular form. These results encourage him to proceed with the treatment, and he hopes that his preliminary communication may induce others to try it. (See also Introduction, section, "Glandular Therapeutics.")

REFERENCES.—"Munch. med. Woch.," April 7, 1896; and "Brit. Med. Journ.," May 16, 1896.

PARACHLOROPHENOL.

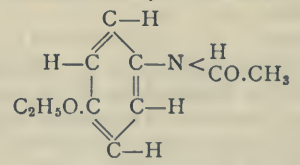
Dr. Ch. Girard[1] states that this drug is crystalline at ordinary temperature, has an odour similar to phenol, and is very soluble in alcohol and ether, although but slightly in distilled water, which takes up only 1·3 per cent. With the addition of a small quantity of alcohol a 2 per cent. solution can be obtained. It coagulates albumin, as does phenol, but not completely. In a 2 per cent. solution it is a little less energetic than corrosive sublimate, but is more active than 5 per cent. solutions of phenol or cresol. It is less poisonous than these substances. The urine of the animals used for experiment, even exposed to the air, remained for a month without odour or any sign of putrefaction, the colouration only becoming more pronounced. From the experience of this antiseptic in about two hundred operations the following conclusions are reached: In from 1 to 2 per cent. solutions

it is an energetic antiseptic; it is of definite chemical combination, and in solution is colourless, or almost so, and its odour is less disagreeable than that of other phenol or cresol derivatives; it can be used for the disinfection of the hands and instruments.

REFERENCES.—[1] "Revue médicale de la Suisse Romande," No. 7, p. 365, and "Amer. Journ. Med. Sci.," Feb., 1896.

PHENACETIN—

$C_6H_4(O.C_2H_5).NH.C_2H_3O$.—This compound[1] came into use as a therapeutic agent in 1887, when Von Hinsberg and Kast announced the results of their extended study. It forms a white, crystalline,



odourless, and almost tasteless powder. If pure, it should require about 70 cubic centimètres of boiling water for its complete solution, which should have a neutral reaction; 1 part dissolves in 1500 parts of cold water, and freely in alcohol. It melts at 135° C., and should burn without leaving a residue. A fall of two degrees below the melting-point given above is cause for suspicion of adulteration, according to Platt.

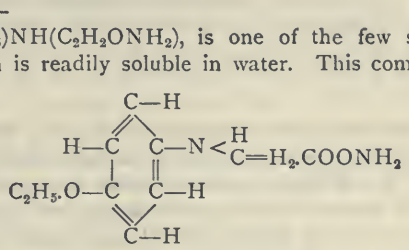
Dr. G. Krönig[2] reports a fatal case of phenacetin poisoning. For occipital headache a printer's assistant, aged seventeen, received five 15-grain phenacetin powders, of which not more than two were to be used in a day. After a single dose vomiting commenced, and great weakness and a bluish-grey colouration of face and lips were noticed. The temperature was 102·2° F., the pupils were of medium size, the pulse was weak, and the patient complained of headache, vomiting, and diarrhœa. The urine was of chocolate colour, the conjunctivæ were slightly jaundiced. General icterus followed, with cyanosis of lips, ears, hands, and feet. The small urine obtained by catheter was thick, dark reddish-brown in colour, and contained masses of almost pure blood. Death followed two days after the ingestion of the remedy. As the patient was septic from a purulent otitis, a necropsy was necessary to show that death was due to the drug. The diagnosis reached by this means was stated as universal methæmoglobinæmia, although the patient within the preceding three weeks had taken four similar doses with no apparent ill effects.

REFERENCES. — [1] "Therap. Gaz.," July 15, 1895; [2] "Berliner klinische Wochenschrift," 1895, No. 46, p. 998.

PHENAZON. (See "Antipyrin.")

PHENOCOLL—

$C_6H_4(OC_2H_5)NH(C_2H_2ONH_2)$, is one of the few synthetic antipyretics which is readily soluble in water. This compound is most

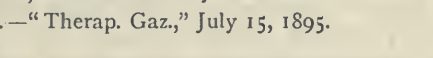


largely if, indeed, not always, used as a salt, the hydrochlorate being preferred, although the acetate, carbonate, and salicylate have also been tried. The base, phenocoll, melts at 126° C. The hydrochlorate is soluble in 16 parts of water. It has been tried in **Pneumonia, Rheumatism,** etc., with satisfactory results.

REFERENCE.—"Therap. Gaz.," July 15, 1895.

PIPERAZINE—

$C_4H_{10}N_2$, is diethylene diamine. It is obtained by the decomposition of the ethylene diamine by heat, thus :—



or from ethylene dichloride by heating with alcoholic ammonia, thus : $2C_2H_4Cl_2+4NH_3=(C_2H_4)_2N_2H_2.2HCl+2NH_4Cl$. The diethylene diamine hydrochloride is then distilled with KOH to set the base free.

Piperazine occurs as colourless, nearly tasteless crystals, easily soluble in water and alcohol, and having a melting point of 104° to 107° C., and a boiling point of 135° to 138° C. It is a solvent for uric acid, forming neutral urates, $C_4H_{10}N_2.C_5H_4N_4O_3$, possessing twelve times the solvent power of lithium carbonate. Piperazine hydrochloride, $(C_2H_4)_2N_2H_2.2HCl+H_2O$, crystallizes in needles easily soluble in water and alcohol. The salicylate has also been employed. Piperazine phosphate forms four-sided tabular crystals.

REFERENCE.—"Therap. Gaz.," July 15, 1895.

PRIMULA OBCONICA.

Dr. F. W. A. Stott draws attention to the fact that in many people contact with the leaves of this plant produces intense irritation of the skin attended with burning, itching, and tingling. These symptoms often persist for some days. The best treatment is a calamine lotion.

Dr. J. F. Gillet confirms these observations and finds that an erythematous eruption soon appears which rapidly spreads over the face, the palms of the hands, and the flexor aspect of the forearms.

REFERENCE.—"Lancet," April 11, 1896.

PYRANTIN.

This is a new compound prepared by Prof. A. Piutti, and described as para-ethoxylphenylsuccinimide, of the formula $(CH_2.CO)_2.N.C_6H_4.OC_2H_5$. It is obtained by fusing either para-amidophenetol or phenacetin with succinic acid, and extracting with boiling alcohol, when it is obtained in the form of colourless, prismatic needles, which melt at 155° C. (311° F.), soluble in 13·17 parts water at 17° C. (62·6° F.), and in 83·6 parts of boiling water; insoluble in ether. Treated with hydrochloric acid, or with melting potassium bisulphate, pyrantin is decomposed into succinic acid and para-phenetidine. A solution of 0·05 gramme, in 2 to 3 c.c. of concentrated hydrochloric acid yields, after being diluted with water, a ruby-red colour on the addition of 1 drop of a 0·3 per cent. solution of chromic acid. Ammonia and chlorine water impart a light-yellow colouration to aqueous solutions of pyrantin.

Soluble pyrantin is the sodium salt of para-ethoxylphenylsuccinamic acid. It is readily soluble in water, and possesses the same physiological action as pyrantin.

Both preparations have been investigated as regards their therapeutical application, and have been found to possess useful antipyretic properties. They lower the temperature of the body, it is claimed, 1 to 3° C. (1·8 to 5·4° F.), without exerting any effect upon the blood, the heart, or the respiratory organs. De Giovanni recommends pyrantin especially in **Fevers** of a rheumatic nature, in daily doses of from 1 to 3 grammes (15½ to 46 grains).

REFERENCES.—"Pharm. Ztg.," 1896, No. xli., and "Amer. Med. and Surg. Bulletin," March 21, 1896.

QUINOSOL.

Dr. R. Kossman,[1] of Berlin, has made some experiments with this new antiseptic. It is a neutral compound of oxyquinoline which, when used, gives up oxyquinoline in a nascent state and consequently of great antiseptic efficiency. It is relatively so non-poisonous that a dose of 45 grains, given to a rabbit, does not injure the animal, while a 1 in 40,000 solution prevents the development of cultures of the staphylococcus pyogenes aureus. It does not injure the skin, even in so strong a solution as that of 1 in 500; it, however, gives the hands a

yellowish tint, but this may be removed by washing with water. It is free from any unpleasant odour.

Ahlfeld and Vahle[2] report discouraging experiments concerning the efficiency of quinosol as an antiseptic. Even a solution of the strength of 3 per cent. they found not altogether to be relied on. Moreover, they state that it is not so innocent as Kossmann supposed it was. A sturdy rabbit was made sick by a subcutaneous injection of 3 grains of quinosol; its urine was of a dusky-brown colour, but it did not die. Larger doses, however, proved fatal. One animal died in eighteen hours after having received a subcutaneous injection of 8 grains; its blood was found to be blackish-red, and there was a decided dusky colouration of its organs, especially the kidneys.

Dr. E. Witte, of Berlin, treats of quinosol and makes some wholesome remarks about the quest for new antiseptics. In corrosive sublimate, in carbolic acid, and in lysol, he says, we have tried antiseptics; years of observation have taught us the bright and the shady side of their action. The case for quinosol, he holds, has by no means been made out. As to Kossmann's experience in the employment of the drug for a number of months without the occurrence of a single case of infection from a wound or any appearance of poisoning whatever, even so slight as eczema, he doubts if these results are to be ascribed to the quinosol. His own, he says, have been quite as good when he used only a sterile physiological solution of common salt. Furthermore, he argues, even if it is true that traumatic cavities, suppurating and yielding a fœtid secretion, may be favourably affected by quinosol, the fact is of little consequence, for the thing to do is to remove the putrefying masses and use drainage, and it makes no difference whether this or that antiseptic is employed, or, indeed, only sterile water. Germs that have penetrated into the tissue, he remarks, can not be destroyed by disinfection unless the tissue is destroyed at the same time, but those that are on the surface may be got rid of mechanically by irrigation with antiseptic as well as aseptic liquids.

Dr. Witte then takes up Kossmann and Ostermann's statement that quinosol, even in substance, is in no wise irritating to wounds. His own experience has been to the contrary. In two instances he has applied quinosol in substance to the cavities left after the removal of glands, and each time such intense burning pain set in that the patient begged to have it taken out. Although he himself has not observed symptoms of poisoning from quinosol, he insists that we can not be sure they will not occur, and this is true also of iodoform, creolin, lysol, and other drugs, the drawbacks of which do not come to light at first. A minor objection to quinosol is the fact that it stains

the skin and the instruments, but the stain can be removed without much trouble.

Dr. Witte says that quinosol is particularly unsuitable for vaginal irrigation during labour, for it is highly astringent, so that it would rob the vagina of its lubricity and make it rough and unyielding, as corrosive sublimate does. Finally, as to teaching midwives to rely on disinfection of their hands with quinosol or any other drug, to the neglect of thorough scrubbing with soap and water and the use of the nail-brush, that would be teaching them to trust to correction rather than to prevention.

REFERENCES.—[1] "Centralblatt fur Gynäkol.," Dec. 28, 1895, and "New York Med. Journ.," Jan. 25, 1896; [2] "Centralblatt für Gynäkol.," Feb. 29, 1896.

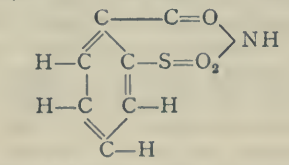
RHUS TOXICODENDRON.

Dr. Murrell [1] calls attention to the fact that this drug when handled produces an acute dermatitis, the inflammation of which is erysipelatous in character, rapidly spreading from the parts first affected all over the body, and involving even the mucous membranes. The author finds that certain susceptible people are seized with acute eczema after handling the Japanese fancy boxes now so commonly sold in the shops, the explanation being that these boxes are varnished with a preparation made from the leaves of this plant.

REFERENCE.—[1] "Lancet," April 11, 1896.

SACCHARIN—

$C_6H_4SO_2CONH$, is one of the synthetic compounds to which Americans can point with pride as having been worked out in an American laboratory. The reactions by which it is made are too



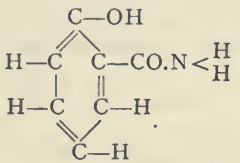
complexed for insertion here. It occurs as a white powder of a faintly aromatic odour, slightly volatile at 100° C., and melting at 200° C. It is soluble in 250 parts of cold water, 30 parts of hot water, also in alcohol (1 to 30), and moderately soluble in ether. Its solubility in water is increased by the presence of alkalies or alkaline carbonates. It possesses an intensely sweet taste, being three hundred times sweeter than cane-sugar, 1 part possessing the power of perceptibly sweetening 10,000 parts of water. It passes unchanged through the system, and can be

detected in the urine. It is a moderate antiseptic, but its use as a food preservative has been prohibited in France, Germany, and Belgium, because its use antagonizes the use of sugar, which is a valuable nutrient. It must not be confounded with Péligot's saccharin, which is an entirely different product. With bases it forms ortho-sulphaminbenzoic acid salts, which possess an equally sweet taste, and are much more soluble. Pure saccharin leaves no residue on heating on platinum foil, and is not charred by warming with sulphuric acid.

REFERENCE.—"Therap. Gaz.," July 15, 1895.

SALICYLAMIDE—

$C_6H_4(OH).CO.NH_2$, is made from methyl salicylate (artificial oil of winter-green) by the action of ammonia. It crystallizes from ether in

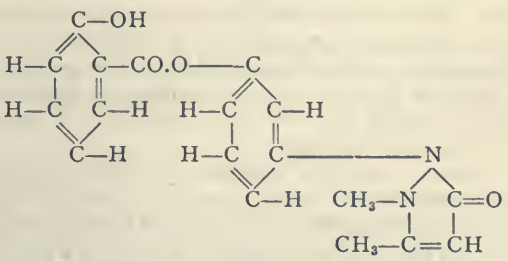


lustrous yellow plates, melting at 142° C., and can be sublimed when carefully heated. It is moderately soluble in water, and is tasteless, but leaves an unpleasant grittiness in the mouth.

REFERENCE.—"Therap. Gaz.," July 15, 1895.

SALIPYRIN—

$C_{11}H_{12}N_2O.C_7H_6O_2$.—It possesses the therapeutic properties of both antipyrin and salicylic acid. In fact, some question has been raised whether it is really a chemical combination, or merely a physical mixture. If the former, its constitution is probably as follows :—



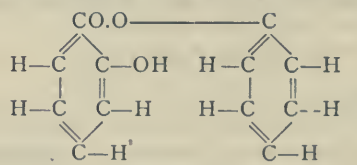
It occurs in coarsely crystalline, white powder, without odour, and

having a sweet and pleasant taste. It melts at 91·5° C., and is easily soluble in alcohol and benzole, but difficultly soluble in water (·4 part in 100 cold, and 4·4 parts in 100 boiling) and ether.

REFERENCE.—"Therap. Gaz.," July 15, 1895.

SALOL—

$C_6H_4(OH).CO.OC_6H_5$, is too well known to need any introductory remarks, and will be discussed only from a chemical standpoint. It



is prepared commercially by heating sodium salicylate and sodium phenate with phosgene gas (or carbonyloxychloride), thus :—

$$C_6H_4{<}^{OH}_{CO.ONa} + C_6H_5.ONa + COCl_2 =$$

$$C_6H_4{<}^{OH}_{CO.OC_6H_5} + 2NaCl + CO_2$$

Salol occurs in small rhombic prisms, or a white tasteless powder having a faint aromatic odour. It melts at 42° to 43° C. It is insoluble in water, soluble in 10 parts of alcohol and ·3 part of ether. Heated upon platinum foil, it should burn without leaving a residue, otherwise the salol is adulterated with mineral matter.

When ·5 gramme of salol is dissolved in 5 cubic centimètres of alcohol and 15 cubic centimètres of water, and a few drops of ferric chloride added, it gives a violet colouration, which should vanish after ten minutes, otherwise free salicylic acid or phenol, or both, are present.[1]

Colombini[2] states that in the presence of alkaline fluids or living tissues salol breaks up into salicylic acid and phenol in the nascent state. Clinically, it is found that salol in vaseline solution—the best solvent—does not irritate the skin or inflame ulcerated surfaces. A useful field is opened up in the local application of salol as a non-irritating and powerful antiseptic.

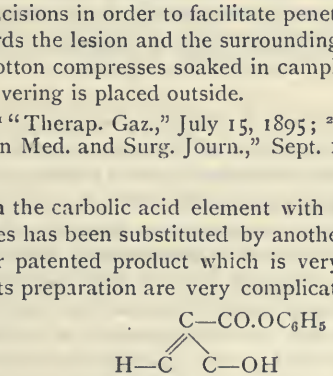
John T. Bowen[3] states that Elsenberg has used camphorated salol in cutaneous affections for two years, and has found it of special value in **Furuncles** and **Carbuncles.** It is prepared by moistening 1 part of camphor with a few drops of alcohol, rubbing this in a porcelain mortar with a 1·4 part of salol until a transparent liquid is obtained. A

change takes place in from twelve to twenty-four hours; the pain diminishes, the redness and inflammation of the adjoining parts disappear, and the swelling becomes progressively smaller, without the formation of pus. The secretion obtained from the vesicle at the point of the furuncle yields a pure culture of the staphylococcus aureus on nutrient media, as do also bits of the infiltrated tissue. After camphorated salol has been used for twenty-four hours no such cultures can be obtained. When suppuration has already taken place in the furuncle, and after the slough has been removed, the pain and hyperæmia may be much lessened by the application of the camphorated salol, and the suppuration diminished. The healing process then advances quickly, a slight discolouration and some infiltration being felt only for a short time. The method of using the drug is to lay bare the point of the furuncle, or, in the case of carbuncle, to make several moderately deep incisions in order to facilitate penetration into the infiltration; afterwards the lesion and the surrounding hyperæmic parts are covered with cotton compresses soaked in camphorated salol, and an impermeable covering is placed outside.

REFERENCES.—[1] "Therap. Gaz.," July 15, 1895; [2] "Rif. med.," Sept. 14, 1895; [3] "Boston Med. and Surg. Journ.," Sept. 19, 1895.

SALOPHEN—

Or salol in which the carbolic acid element with its accompanying poisonous properties has been substituted by another and more useful element, is another patented product which is very commonly used. The reactions for its preparation are very complicated. It occurs as



thin laminar crystals, which are odourless and tasteless, and have a neutral reaction. It is almost insoluble in water, soluble in ether and alcohol. It has been used with good results, so reports state, in cases of **Rheumatism.**

REFERENCE —"Therap. Gaz.," July 15, 1895.

SAMBUCUS NIGER.

M. Lemoine,[1] Professor of Clinical Medicine in the Medical Faculty of Lille, has recently revived the practice of employing the elder (sambucus niger) as a diuretic. He was much struck with the efficacy of a decoction of elder bark in a case of general **Anasarca** with

Pulmonary Œdema and **Ascites** due to **Subacute Nephritis** in which several ordinary diuretics had failed. The first day of the treatment by elder the urine, which had been very scanty, rose to 400 grammes, the next to 1500 grammes, and at the end of a week's treatment to 3500 grammes. The author has had occasion to use this remedy frequently for œdema or ascites due to heart or kidney troubles, and it has almost invariably been successful in increasing the quantity of urine passed. At his request Dr. Combermale has made a series of experiments on animals. He finds that infusions and decoctions of the inner bark are more active than those of the outer bark. Latterly M. Lemoine has employed an alcoholic extract of the inner bark, sometimes prescribing it alone, sometimes alternately with digitalis or caffein, the effects of which it serves to prolong and increase. There do not seem to be any distinct contra-indications to its use, and it does not produce any unpleasant head or lung symptoms. It may, however, sometimes cause diarrhœa, or increase it if already existing.

REFERENCE.—[1] "Lancet," May 16, 1896.

SANGUINAL.

Dr. Otto Dornblüth,[1] of Rostock, gives his experience of sanguinal, which contains 46 per cent. of the salts normally found in the blood, 44 per cent. of muscle albumin, and 10 per cent. of hæmoglobin, and therefore corresponds almost perfectly to normal blood in composition. In numerous cases, ranging from the slightest **Nervousness** up to the severest forms of **Neurasthenia,** in which the previous use of all sorts of preparations of iron had been unavailing, the use of sanguinal speedily brought about an improved condition, manifested by a blooming appearance, a decided feeling of well-being, and a good appetite. Sanguinal is given in pills, three times a day, before meals.

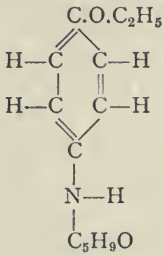
REFERENCES.—[1] "Deutsche Medizinal-Zeitung," Jan. 16, 1896, and "New York Med. Journ.," Feb. 8, 1896.

SCOPOLAMINE.

Dr. Genge has conducted a series of observations at the Westminster Hospital on the value of scopolamine hydrobromate as a mydriatic. He finds that a drop of a 1 in 3000 aqueous solution fully dilates the pupil in fifteen minutes, and that the effect persists for eighty-four hours. A 1 in 5000 acts in twenty minutes and lasts for seventy-two hours. Even much weaker solutions are efficacious; a single drop of a 1 in 20,000 solution dilating the pupil—although not completely—in twenty minutes, the dilatation lasting on an average for sixty hours. Dr. Genge has found scopolamine useful in cases of **Iritis,** and thinks that it has many advantages over the more commonly employed mydriatic alkaloids. (See also article "Atropine, p. 25.")

SEDATIN—

$C_6H_4(O.C_2H_5).NHC_5H_9O$, is a very recent acquisition. It is prepared by the action of valeric acid on phenetidine or by the action of phenetidine hydrochlorate upon sodium valerianate. It crystallizes in



fine needles, and is only slightly soluble in benzole, ether, chloroform, and cold methyl or ethyl alcohol; it is quite soluble in the two latter, when hot.

REFERENCE.—"Therap. Gaz.," July 15, 1895.

SERPENT VENOM.

A very interesting series of experiments were recorded by Prof. Fraser, of Edinburgh, in a paper read before the Royal Institution of Great Britain.

It has long been known that the natives of certain tropical countries are in the habit of drinking the venom of serpents partly on account of the stimulating effects produced, which they describe as resembling those of Indian hemp, but chiefly as a means of protecting themselves against the effects of the serpent's bite. There are many well authenticated instances of natives who allow themselves to be bitten by the most venomous serpents, feeling safe in the immunity thus produced, and with results which showed that their assurance was amply justified.

Prof. Fraser's experiments afford scientific proof of this. He first ascertained the minimum lethal dose of the venoms of various serpents upon different animals, the cobra venom proving the most powerful.

These facts having been ascertained, attempts were next made to render animals proof against lethal doses, by administering to them a succession of gradually increasing non-lethal doses. These were, for the first few doses, in some of the experiments, $\frac{1}{10}$ of the minimum-lethal, in others $\frac{1}{5}$, in others $\frac{1}{2}$ of the minimum-lethal, and in others almost as great as the minimum-lethal. At varying intervals the doses were repeated, and by and by gradually increased, until the actual

minimum-lethal had been attained. The subsequent doses by gradual increments exceeded the minimum-lethal, and after five or six times the minimum-lethal had been reached, it was found that the increments could be increased so that each became twice, four times, and latterly even five times the minimum-lethal, and still the animal suffered little, and, in many cases, no appreciable injury.

Almost the only observable phenomena were a rise in the body temperature, which continued for a few hours after the injection, and which contrasts with the fall that occurs after the administration of even non-lethal doses, in non-protected animals ; and a loss of appetite, which usually, though not invariably, occurred, and was probably the cause of a temporary fall in weight during the day or two days succeeding each injection. On the other hand, during the process of successful immunisation, the animals increased in weight, fed well, and appeared to acquire increased vigour and liveliness.

It is marvellous to observe these evidences of the absence of injurious effects, and even of the production of benefit in an animal which, for instance, has received in one single dose a quantity of venom sufficient to kill, in less than six hours, fifty animals of the same weight, and in the course of five or six months a total quantity of venom sufficient to destroy the lives of three hundred and seventy animals of the same species and weight.

It was found that the animals immunised against one venom, were also not affected by other venoms, although they were better able to resist the venom of the particular snake with which they had been inoculated.

Prof. Fraser next collected the blood serum of animals who had been protected by injections of the venom ; this was dried and powdered, and labelled "Anti-venene." It is prepared for use by dissolving in water.

The properties of this antivenene were investigated under varied conditions, with the result that it was found that when one and a half the minimum lethal dose of venom was used that the quantity of antivenene per kilogramme of the animal's weight to prevent death was :—

(1,) When mixed with the venom before administration, ·24 cc.

(2,) When injected at another part of the body simultaneously with the venom, 3·5 cc.

(3,) When injected thirty minutes *before* the venom, 2·7 cc.

(4,) When injected thirty minutes *after* the venom, 3·2 cc.

Prof. Fraser's investigations further showed that serpents' venom introduced into the stomach in large quantity—in a quantity which, if injected under the skin, would be sufficient to kill one thousand

animals of the same species and weight—while it failed to produce any definite symptoms of poisoning, nevertheless produced complete protection against the lethal effect of doses of venom more than sufficient to kill the animals. There is a probable significance, further, in the general resemblance between the results of these experiments and those in which antivenene, and not venom, was introduced into the stomach. The bearing of these facts is obvious upon discussions relating to the production of immunisation against the toxines of diseases and to the origin of the antidotal qualities of the blood-serum used in their treatment. It is difficult to account for them otherwise than by supposing that the venom while in the stomach had been subjected to a process of analysis, by which the constituents which are poisonous had failed to be absorbed into the blood, or had been destroyed in the stomach or upper part of the alimentary canal, while the constituent or constituents which are antivenomous, or rather antidotal, had passed into the blood, in sufficient quantity to protect the animals against otherwise lethal administrations of venom. He confidently anticipates that this natural process of analysis will, by and by, be successfully repeated outside of the body by chemical methods.

After careful consideration of the dose of antivenene which would probably be required to administer to a man bitten by the cobra, Prof. Fraser concludes that about 11½ ounces would be necessary, if given not much longer than thirty minutes after the bite had been inflicted. This implies a difficulty, which, though not insuperable, greatly diminishes the practical value of antivenene as an antidote. But the author's studies are not yet completed, and taking into account the facts which Prof. Fraser has himself advanced, it seems possible that the serum preparations may not be required, but that the direct administration of the venom by the mouth may form the best antidote to the venom which the serpent has injected under the skin. This sounds paradoxical, but time may give it proof.

SERUM THERAPEUTICS—(See Introduction to this Section, p. 7.)

SOMATOSE.

Thomalla[1] points out that this substance, containing as it does 84 to 86 per cent. albumose and 13·5 nitrogenous matter, should be of value in diseases such as typhoid fever, gastritis, and irritable conditions of the intestinal tract.

In five cases of **Typhoid Fever** the writer found it of great value in maintaining the strength without in any way producing bad effects so far as the intestinal condition was concerned or increase of temperature, and in each case convalescence was unimpeded and of shorter average duration.

The author has also tried it in severe cases of **Gastritis** with most beneficial results, and in **Acute Pneumonia** the strength was maintained, and the heart condition was excellent all through. He particularly recommends somatose in **Diphtheria** in children, and also in chronic tuberculous conditions. It may be given in milk or water, or even in soup, as it is almost without taste. A teaspoonful may be given to a child three times a day, and about double that quantity to an adult.

REFERENCE.—[1] "Gazzetta med. Lombarda," Feb. 10, 1896.

SPARTEINE.

Lannois[1] remarks that it is known that Geley attributed to the cutaneous applications of sparteine many therapeutical properties, the most prominent of which is the regulation of thermogenesis. Boitel, says the author, after examining many thermometric charts under his direction, reached altogether different conclusions from those of Geley In Boitel's experiments sparteine, with but one exception, was the only drug used, and, according to Geley, it seemed to have the most energetic action. The investigations were pursued exclusively in a special class of patients, the tuberculous, for in them all other treatment may be suspended for several days without the risk of aggravating their condition.

Lannois cites several cases in which the applications of sparteine were employed in strict accordance with Geley's directions as to the conditions under which the sparteine should be used, one of which is that the painting should be done at a time when the temperature is not rising, and he mentions six o'clock in the evening as the most favourable hour. It was precisely this condition, which, says the author, Geley considered so important, that had enabled him to reach an entirely different interpretation of the results obtained. It will be recalled, he says, that Geley specified that these applications had no lasting therapeutic effect in visceral affections. With regard to the immediate antithermic results, Geley divided all the cases into three classes: Those in which the temperature remained stationary; those in which it continued to rise; and those in which it fell after the application of the sparteine. It is with the latter condition that the author especially deals, as there was no fall in temperature in the former conditions.

If, says Lannois, the temperature of tuberculous persons (which class of patients Geley had given much attention to) is taken regularly every hour or every three hours, it will be seen that in them the maximum of the temperature is reached at six o'clock in the evening, sometimes even before, and that the thermometric curve begins to fall

at this moment; at eight or nine o'clock the lowering is very perceptible, and at midnight it is very marked. If the temperature is observed only on the days when the sparteine is applied, what may be supposed to be a therapeutic fall in temperature is in reality only a normal and regular symptom. In order to be convinced, says the author, that it was by this mistaken interpretation that Geley obtained his results, it is sufficient to glance over the charts in Boitel's thesis. Here the applications were made under the required conditions at six o'clock in the evening. Lannois thinks it is impossible to find any modification in these curves, whether they are considered together, or whether a comparison is made from day to day, of the cases in which the sparteine was applied, with those in which it was not applied.

REFERENCE.—[1] "Lyon médical," Jan. 19, 1896.

STRONTIUM CARBONATE.

M. E. Métral[1] proposes this salt, hitherto unused in medicine, as a dentifrice. Its advantages are:—

(1,) Its detersive power is midway between that of calcium and magnesium carbonates, whose action is very slight, and that of pumice-stone, which can abrade the teeth if the enamel is of poor quality.

(2,) Its reaction is slightly alkaline, an advantage, for acidity is the initial cause of caries.

(3,) Its use is agreeable because its oily condition causes it to attach itself to the brush and to the teeth, so that it does not get into the throat and cause tickling, cough, or even nausea.

(4,) It is reasonable in price.

REFERENCE.—[1] "Amer. Journ. Med. Sci.," Jan., 1896.

STYPTICIN.

Gottschalk[1] records the results of the use of this drug in forty-seven cases of **Bleeding from the Uterus.**

Stypticin is the hydrochloride of cotarnin, one of the oxidation products of the opium alkaloid narcotin. In chemical structure it is closely allied to hydrastinin. It can be given subcutaneously, or more conveniently in powder. The earliest experiences of its employment were not favourable owing to too small a dose being given. Gottschalk finds that 0·05 g. can be taken five or six times a day without any evil results.

It has a great advantage over hydrastis and other uterine hæmostatics, as it possesses a well-marked and sedative action.

Stypticin checks promptly hæmorrhage resulting from uterine subinvolution. In **Fungous Endometritis** stypticin is a valuable adjuvant to the curette; it is useful when the patient objects to curetting, and

in those cases in which this treatment does not stop the hæmorrhage. It is useful in bleeding caused by fibroids or the climacteric; in hæmorrhage secondary to parametritis or disease of the appendages it is less effectual than hydrastis. In purely congestive **Menorrhagia** it is well combined with hydrastis.

Stypticin is powerless to control the bleeding of uterine polypi, and is contra-indicated in threatened abortion, or, indeed, in any of the hæmorrhages of pregnancy, as it has a marked power of stimulating uterine contraction.

In menorrhagia the drug is best given four or five days before the period, and continued till bleeding ceases; this not only diminishes the hæmorrhage, but also necessitates the use of much smaller doses.

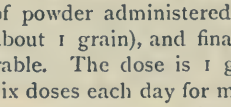
In all Gottschalk's experiments no other treatment than that of stypticin was adopted. The effect in subinvolution was lasting, but further research is required to establish the permanence of cure in other affections.

Dr. H. Gaertig[2] has made use of this remedy during the past two years in the form of powder administered in wafers, in solution (10 drops representing about 1 grain), and finally in gelatin perles; the last method is preferable. The dose is 1 grain twice to eight times daily. The use of six doses each day for many weeks gave rise to no inconvenience. Forty-six instances of its use are briefly presented. Among these may be cited: seven of **Menorrhagia**; **Endometritis with Hæmorrhage,** eleven; complicated and simple **Retroflexion,** eleven; **Uterine Subinvolution,** *post partum* or *post abortum*, seven; **Climacteric Hæmorrhage,** three; hæmorrhage following inflammation of the appendages, with retroflexion, once, without retroflexion, twice; hæmorrhage from myoma, four; and hæmorrhage after threatened abortion once. The most positive results were obtained in uncomplicated menorrhagia and in that of the menopause. The drug is apparently valuable for the hæmorrhage of subinvolution and for that associated with inflammatory conditions of the appendages.

REFERENCES.—[1] "Therap. Monats.," Dec., 1895, and "Brit. Med. Journ.," Jan. 11, 1896; [2] "Therap. Monats.," 1896.

SULPHALDEHYDE—

C_2H_4S, or acetaldehyde, in which the oxygen is replaced by sulphur,



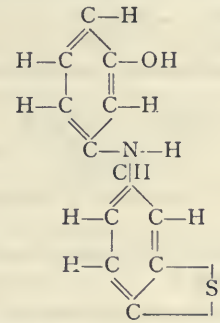
is obtained by the action of sulphuretted hydrogen on acetaldehyde in

aqueous solution. It is an oily liquid, having a disagreeable odour; it solidifies at—8° C. The commercial product consists of a mixture of sulphaldehyde and acetaldehyde, with a probable composition, $CH_3.CHS+(CH_3.CHO)_2.CH_3CHS$. It is analogous to paraldehyde in its therapeutic properties, but is much more powerful.

REFERENCE.—"Therap. Gaz.," July 15, 1895.

SULPHAMINOL—

$C_6H_3(OH).NH.C_6H_4S$, is a comparatively recent antiseptic, and was proposed as a substitute for iodoform. It is obtained by the reaction

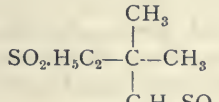


between methoxydiphenylamine and sulphur, as a light yellow powder, which is insoluble in water, and possesses no *odour* or taste. It does not appear to have met with the success which was predicted for it.

REFERENCE.—"Therap. Gaz.," July 15, 1895.

SULPHONAL—

$C_7H_{16}(SO_2)_2$, is one of the older synthetic remedies, having been discovered by Baumann in 1885, although only used in medicine about 1889. It is produced by the action of dry hydrochloric acid on



a mixture of acetone and mercaptan, producing acetone diethyl mercaptan, which, by oxidation with permanganate of potassium, yields sulphonal.

It occurs in heavy prismatic crystals, or in a crystalline powder, which melts at 125·5° C., and boils at 300° C. It dissolves in 15 parts of boiling water, 500 parts of water at 15° C., in 135 parts of ether, in 65

parts of absolute alcohol at 15° C., in 2 parts of boiling absolute alcohol, and in 110 parts of 50 per cent. alcohol. The melting-point

$$\begin{matrix}CH_3\\CH_3\end{matrix}\!>\!C\!=\!O + \begin{matrix}H\,S.C_2H_5\\H\,S.C_2H_5\end{matrix} =$$

Acetone. Mercaptan.

$$\begin{matrix}CH_3\\CH_3\end{matrix}\!>\!C\!<\!\begin{matrix}S.C_2H_5\\S.C_2H_5\end{matrix} + H_2O.$$

Acetone diethyl mercaptan.

$$\begin{matrix}CH_3\\CH_3\end{matrix}\!>\!C\!<\!\begin{matrix}S.C_2H_5\\S.C_2H_5\end{matrix} + 4O =.$$

Acetone diethyl mercaptan.

$$\begin{matrix}CH_3\\CH_3\end{matrix}\!>\!C\!<\!\begin{matrix}SO_2.C_2H_5\\SO_2.C_2H_5\end{matrix}$$

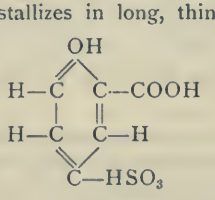
Sulphonal.

and solubilities serve as a means of determining its purity. It is an hypnotic of great value.

REFERENCE.—"Therap. Gaz.," July 15, 1895.

SULPHOSALICYLIC ACID—

$C_6H_3.(SO_3H).(OH).COOH$, is obtained by the action of sulphur trioxide (SO_3) on salicylic acid, or by heating salicylic acid with sulphuric acid. It crystallizes in long, thin, very soluble needles,



which melt at 120° C. The sodium salt, which is the compound used, occurs as a fine crystalline powder, of a sour, astringent taste, and easily soluble in water, but almost insoluble in alcohol and ether.

REFERENCE.—"Therap. Gaz.," July 15, 1895.

SUPRA-RENAL CAPSULE EXTRACT.

Gourfein[1] has extracted a toxic substance from the supra-renal capsules. The method at first used to isolate the substance was to precipitate a glycerine extract of the capsules by alcohol. Later, as the glycerine itself proved to some extent toxic he devised the following method: Cut up and triturate the supra-renal capsules of oxen, calves, or sheep in a mortar with a little water; pour several volumes

of warm water over them, and leave in a water bath for a quarter of an hour; filter and add to the filtrate the liquid obtained by pressure from the residue on the filter; evaporate in a water bath to a syrupy consistence, and add four times its volume of alcohol; leave the mixture for twenty-four hours in a cool place and filter. The precipitate by alcohol (chiefly albuminoids), when re-dissolved in water and injected into animals subcutaneously is quite inactive, but the residue obtained after evaporating the alcoholic liquid is very toxic.

Professor W. A. Gluzinski,[2] of Cracow, has carried out a series of experiments on frogs, guinea-pigs, and rabbits, with the view of studying the action of extract of the supra-renal bodies on the animal system. The capsules were derived from oxen, calves, pigs, dogs, and rabbits. Immediately after the excision the glands were cut into small pieces and thrown into a vessel containing a 1 to 1 mixture of water with glycerine (4 parts of the mixture to 1 of the material). After standing at some cool place for from eight to twelve hours the extract was filtered through glass-wool, and paper, and then injected into a vein or under the skin.

The extract proved to be endowed with highly toxic properties, being much more poisonous than similarly prepared extracts of the spleen, pancreas, or any other organ. In rabbits, when injected into an aural vein, a dose of from 0·3 to 1 gramme kills an animal weighing 1,500 grammes in a few minutes, the principal symptoms consisting of paralysis of the hind limbs, convulsions in the anterior ones, opisthotonos, and suffocation. The blood pressure at first markedly rises, but afterwards sinks. Artificial respiration somewhat retards the lethal issue. In such cases where the animals survive ten minutes or longer the necropsy reveals pulmonary œdema, extravasations into the pleural cavity, and diastolic condition of the heart.

When introduced hypodermically the extract's actions proved to be less powerful; some of the animals succumbed in several days after the injection, but others ultimately made a complete recovery. In the former case the *post mortem* examination showed the presence of acute parenchymatous nephritis. An exposure of the extract to the temperature of 100° C. does not diminish its toxic power.

Two cases of Addison's disease treated unsuccessfully with supra-renal capsule have been recorded.

Dr. Ringer and Dr. Phear,[3] at a meeting of the Clinical Society, contributed an account of a case of this disease treated with supra-renal extract, and also gave a brief *résumé* of recorded cases for which similar treatment had been adopted. It appeared that of nine cases five had shown improvement, although in some of these a sufficient

time had not elapsed to determine whether or not the benefit was permanent. In two cases no improvement was noted ; in one case the treatment was given only a very limited trial ; and in one the disease ended fatally in spite of supra-renal treatment. The supra-renal tissue was in some cases administered by the mouth, in other cases hypodermically. Details were then given of a case lately under this treatment in University College Hospital. A woman, aged twenty-eight, had been suffering from symptoms of **Addison's Disease** for a period of two years, attended with progressive weakness, some loss of flesh, vomiting without special relation to food, and pigmentation of the skin. Excessive pigment was present on the face, hands, forearms, axillæ, about the nipple, over the knee-cap, and in the neighbourhood of the toes and ankles. The discolouration was well marked in the armpits and around the mouth. There were deeply pigmented inky patches on the mucous membrane of the mouth, opposite the teeth. There was no evidence of tubercle in the lungs or elsewhere. Treatment with supra-renal extract was commenced, in doses equivalent to 45 grains of supra-renal body daily ; this was gradually increased to a daily dose of 120 grains. There rapidly followed improvement in the general condition, and the pigmentation became notably lessened in degree. Vomiting, however, remained troublesome. No rise of arterial tension was noted. The improvement continued for four weeks, when there was a rapid change for the worse. There was no increase of pigmentation, but the general condition quickly deteriorated, cardiac action became feeble, and death occurred within six weeks of the commencement of the treatment and just over two years from the earliest symptoms of the disease. The temperature rose to 102° F. on the day before death. During the last few days arsenic and strychnine were given in the place of the supra-renal extract. The necropsy showed the supra-renal bodies to be shrunken and flattened about a third of their normal size, and exhibiting no trace of the normal structure.

Dr. Murrell[4] gave an account of a similar case which had been under his care at the Westminster Hospital. The patient, a man, aged thirty-one, was admitted on Nov. 15, 1895. Two of the patient's uncles on the mother's side died from phthisis, but apart from this there was no history of that disease. He had always been well fed and had never been much exposed to cold or wet. He fell from a ladder a distance of about fifteen feet, in October, 1894, but was not hurt and experienced no inconvenience from it. He had never been laid up and always led a comfortable and fairly easy life. About the beginning of August he noticed that his skin was beginning to

grow yellow, but for some weeks before this he had been feeling unwell and had been depressed in spirits. A week later he had a severe attack of vomiting, which lasted for a couple of days, and was followed soon after by another attack of shorter duration. On admission to hospital he was found to be very weak and was distinctly emaciated. He weighed 8 st. 13 lb., and stated that before his illness he had weighed 11 st. He was curiously apathetic and showed but little disposition either for conversation or exertion. The whole body presented an olive or greenish-brown colour, the pigmentation being very marked on the face, hands, abdomen, and in the regions of the axillæ and scrotum. There were two well-marked patches on the mucous membrane of the mouth, one on either side. His appetite was fair, but not so good, he said, as it was formerly. There was no cough, and an examination of the chest showed nothing abnormal with the exception of a little increased resonance over the front of both lungs. The bowels were regular and there was no albumin or sugar in the urine. He was kept under observation and without active treatment for ten days. During that time he had only one attack of vomiting. He lost 4 lb. in weight, and in the evening his temperature varied from 99·6° to 100° F. On the 26th he was ordered tabloids of extract of supra-renal capsule, 1 three times a day, each tabloid representing 5 grains of the fresh extract. This treatment was continued for three weeks, and during that time he took 60 tabloids. He suffered a great deal from nausea, and had three bad attacks of vomiting. He lost 3 lb. in weight, and there was a distinct increase in the amount of pigmentation. It was thought that possibly the dose might be insufficient, and 4 tabloids three times a day were ordered, but they so distinctly increased the patient's discomfort that treatment in this form was reluctantly abandoned. On Dec. 17th arrangements were made for giving the patient the fresh supra-renal capsules of sheep. Mr. Copeland, the house physician, obtained the co-operation of a friendly butcher, who placed at his disposal as many animals as were required. The sheep were slaughtered in Mr. Copeland's presence, and the adrenals were immediately removed by him and brought absolutely fresh to the hospital. The initial dose was a drachm, finely minced and administered on bread and butter, a little pepper and salt being added to improve the flavour. The first dose was given on the 18th at 10 a.m., and the patient almost immediately complained of nausea and vomited slightly. This was followed an hour later by a severe attack of vomiting. The pulse had been weak throughout, and no rise of arterial tension was noted. At 4 p.m. a second dose of a drachm was given, and this, too, was followed by vomiting. On the

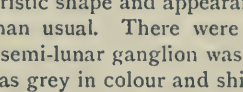
19th at 4.30 p.m.—that is, after an interval of twenty-four hours—a dose of ½ a drachm was given, a little brown sugar being substituted for the pepper and salt for flavouring purposes. This was followed in forty-five minutes by a severe attack of vomiting, and the patient complained of nausea, which persisted the greater part of the night. On the 20th the dose was reduced to 15 grains, and this was given three times a day until Jan. 1st, 1896. As it was thought that possibly there might be some difference in action in the adrenals of different animals a calf was sometimes substituted for the sheep, but with no better result. The patient had several severe attacks of vomiting, rapidly lost weight and strength, and became much more listless. The pigmentation deepened in colour, and as the patient's condition was extremely critical, no further attempt was made to push the treatment. He gradually sank and died on Jan. 6th, after having been fifty-three days in the hospital.

At the *post mortem* examination, which was made by Dr. Hebb, it was found that the adrenals were much enlarged and were represented by fibro-caseous masses. The right weighed rather more than ¾ oz., and the left a little under 1 oz. Cover-glass preparations from the juice of the capsules showed a small number of micro-organisms giving the specific colour reaction of tubercle bacilli, and although some had the characteristic shape and appearance, most of them were shorter and thicker than usual. There were some ovoid skein-like collections. The left semi-lunar ganglion was swollen and twice the size of the right. It was grey in colour and shining. The lungs presented a few caseous masses; the pancreas was atrophied and the kidneys were normal. Nothing was detected in the brain.

REFERENCES.—[1] "Rev. méd. de la Suisse Rom.," Oct. 20, 1895; [2] "Wien. klin. Woch.," Nov. 14, 1895; [3] "Lancet," Jan. 18, 1896; [4] Ibid., Feb. 1, 1896.

TETRONAL—

$C_9H_{20}(SO_2)_2$ (not to be confounded with the hydrocarbon *tetrol*), belongs to the sulphonal class. It, like trional, is a patented product.



It melts at 85° C., and is easily soluble in alcohol; 1 part is soluble in 450 parts of cold water.

It has been found that only those disulphones (to which class sulphonal, trional, and tetronal belong) which contain the ethyl group

(C_2H_5) are physiologically active, and that the hypnotic activity increases with the number of such groups. In sulphonal there are only two ethyl groups, in trional there are three, while in tetronal there are four and the hypnotic effect was found to increase in this proportion, tetronal requiring only one-half the quantity to produce the same effect as sulphonal.

REFERENCE.—"Therap. Gaz.," July 15, 1895.

THALLINE—

$C_{10}H_{13}NOH_2SO_4$, is a very efficient and rapid antiseptic, which has been highly recommended in **Typhoid Fever.** It crystallizes in rhombic crystals, fusing at 40° C., and possessing a peculiar, pleasant aromatic odour. It is readily soluble in most solvents. Commercial thalline is not the base itself, but its sulphate, which is a yellowish-white powder, melting at 110° C., and is moderately soluble in water (7 parts of cold and ½ part of hot), but with difficulty in cold alcohol. Ethyl thalline is similar to the base.

Thalline Tartrate, $C_{10}H_{13}NOC_4H_6O_6$, is a powder similar to the sulphate. It is soluble in 10 parts of cold water, 300 parts of alcohol, and nearly insoluble in chloroform and ether.

REFERENCE.—"Therap. Gaz.," July 15, 1895.

THEOBROMINE.

M. Huchard[1] has employed theobromine to combat anasarca of cardiac and renal origin. This drug is not toxic, but occasionally it gives rise to severe headaches, and sometimes to nausea and vomiting.

Theobromine seems to exert an influence on the renal epithelium, and to produce diuresis without notably increasing the arterial tension. It does not cause albuminuria, but increases it when it does exist.

Theobromine causes a more abundant diuresis than caffein, and a more rapid diuresis than digitalis. It has no cumulative effects. The dose varies from 30 to 45 grains.

M. Huchard recommends the following prescriptions :—45 grains in six pills for two days ; 60 grains in eight pills for two days ; and 75 grains in ten pills for two days. This makes six days of treatment.

REFERENCE—[1] "Progrès médical," Jan. 11, 1896.

THIOFORM.

De Buck,[1] after drawing attention to the excellent results obtained by Rogman in ophthalmic surgery and corneal and conjunctival affections treated with thioform (basic dithio-salicylate of bismuth), praises its qualities in dermatology and medicine. Its value lies, the author believes, in its topical antiseptic, desiccative action, and in its forming

a protective insulating layer for the parts beneath. All raw, weeping, or ulcerated surfaces heal rapidly under thioform, whether in the form of the pure powder or mixed with equal parts of levigated boric acid. It is indicated in all **Ulcerative Skin Affections,** and where epidermic softening exists.

Internally De Buck found its constipating and disinfectant qualities manifest in three cases of acute **Enteritis;** in a fourth chronic case it caused gastric irritation and did not influence the muco-sanguinolent stools. The dose of 2 gr. for an adult, $\frac{1}{2}$ to 1 gr. for a child, in powder or mucilage, was perfectly well borne by the stomach.

The author considers the drug suited for internal use, since the dithio-salicylates are less toxic than the corresponding salicylic salts.

REFERENCES.—[1] "Flandre méd.," Aug. 23, 1894; "Belg. méd.," No. 50, 1895, Ibid., Nov. 28, 1895.

THYROID EXTRACT

Dr. Sigmund Fränkel[1] has made some valuable experiments on the active principle of the thyroid gland. Previous attempts have been made to discover this principle, but without success. The author experimented with known quantities of cold and warm extracts of the thyroid glands of sheep.

The albuminous bodies were precipitated by acetic acid, and by feeding experiments he ascertained that the precipitate had no marked effect, whilst the filtrate that was obtained possessed the well-known properties of the thyroid gland, or, in other words, contained the physiological active principle.

The filtrate was then chemically examined. It was first evaporated to a syrup, and on cooling solidified, showing the presence of gelatine derived from the connective tissue of the thyroid gland. By other experiments this gelatine was shown to be inactive. Fresh material was then taken and the albuminous substances and the gelatine precipitated by neutral acetate of lead, and the metal separated by filtration after precipitation by sulphuretted hydrogen. The residue obtained from the filtrate after evaporation was dissolved in alcohol and ether added, when a body was obtained which had the following peculiarities: it was intensely hygroscopic, and was soluble in water and alcohol. The watery solution had a neutral or slightly alkaline reaction, and only applying the usual tests for an alkaloid a positive result was obtained.

Dr. Fränkel calculated the empirical formula as $C_6H_{11}N_3O_5$. He has provisionally named the substance "thyreo-antitoxin" In experimenting on animals he failed to find the fall of blood-pressure demon-

strated by Schäffer upon intravenous injection of thyroid extract, but acceleration of the pulse-rate was well marked. He also found that the hearts of frogs poisoned by muscarin, which had ceased to beat, could again be brought to act by dropping on them a few drops of a watery solution of the thyro-antitoxin.

In animals, after the thyroid glands had been extirpated and convulsions and other symptoms had followed, temporary recovery followed subcutaneous injections of a 1 per cent. watery solution of the remedy.

The author maintains that he has demonstrated the isolation of the active principles of the thyroid gland, and that it is a pure chemical body, with well-defined chemical properties and occurring in considerable quantity in the gland. He anticipates that we shall eventually be able to administer this particular antitoxin in exact doses. It is odourless, with a taste like that of extract of beef.

E. Baumann[2] and E. Roos have separated the active principle of the thyroid gland. Roos had already shown that the active principle was not destroyed by boiling thyroid gland substance in dilute sulphuric acid (10 per cent.). When the fluid is allowed to cool the active principle forms part of the precipitate. This precipitate is removed by filtration and treated with alcohol (about 85 per cent.). The residue is treated with petroleum-ether to remove fat and fatty acids, and is then dissolved in a 1 per cent. solution of caustic soda. This is filtered, and by the addition of dilute sulphuric acid a precipitate is formed, which, when carefully washed and dried, appears as a brown amorphous substance. This substance, which has been termed "thyro-iodine," is remarkable on account of its containing iodine in firm chemical combination, and by actual experiments as to its action seems to be the active principle of thyroid gland preparations. It is almost insoluble in water, and only slightly soluble in alcohol, but easily soluble in dilute alkalies.

Baumann says thyro-iodine has been shown to have the same therapeutic action as the thyroid gland itself in **Parenchymatous Goitres,** in **Myxœdema,** and in **Obesity.** These results occur more rapidly than under ordinary thyroid treatment. The quantity of thyro-iodine present in the thyroid varies considerably. Abnormally large thyroids contain only a slight trace of iodine. In twenty-six adults with enlarged thyroids only a trace of this compound was found. In Freiburg children thyro-iodine is present in less quantities than in Hamburg children. In children there is less thyro-iodine than in adults; the largest amount occurs between the age of twenty-five and fifty-five. In Freiburg, where goître is common, less thyro-

iodine is found in the thyroid than in Hamburg. Whether in goîtrous districts there is less iodine in the earth and drinking water is not certainly known. For men and a large number of animals living on land iodine is necessary. Thyro-iodine undoubtedly passes from the thyroid gland to other organs. Iodine can be proved to exist in the thymus, and the investigations of Mikulicz, showing the diminution of goîtres under thymus treatment, are interesting in this respect. If potassic iodide is given to animals the iodine present in the thyroid is increased. The same happens with iodoform and other iodine-containing compounds, but it is most marked after the use of thyroid or thyro-iodine. That thyro-iodine is manufactured in the thyroid, and is not a product of general metabolism, is shown by the fact that thyro-iodine is efficient in myxœdema and iodine is not. The author concludes that less iodine exists in goîtres than in normal thyroids. In five colloid goîtres he found very little iodine. In Graves's disease the same is apparently true, but further investigations are needed. Sheep's thyroid is relatively the richest in thyro-iodine.

Thyroid Feeding.—Dr. Lewis C. Bruce[3] reports a series of sixty cases. The majority of cases chosen for treatment were unfavourable, and all had received, without apparent benefit, the best dietetic and therapeutic treatment. There were several most gratifying results in the shape of recoveries where patients threatened to pass into confirmed **Dementia,** or had remained stuporous for long periods, as in one case of two years' standing. Whether its action is due to the febrile process induced by the thyroid and the subsequent reaction to the fever, the answer is made that the actual and visible result of thyroid feeding has all the appearance of a condition induced by a toxin introduced into the blood through the medium of the mucous membrane of the stomach, and it undoubtedly produces a mild feverish condition, the action and reaction to which is often of considerable benefit to the patient. It is also a direct cerebral stimulant which may prove to be an advantageous treatment in cases whose higher cortical cells remain in an anergic condition after acute attacks of insanity. There is also strong probability that at some periods of life the administration of thyroid supplies some substance necessary to the bodily economy.

Dr. Wilhelm Knoepfelmacher[4] has made use of thyroid extract in twenty-two cases of **Struma.** The duration of the treatment varied from six weeks upward. In eleven cases there was marked diminution even to complete disappearance. In five others there was considerable but not so marked improvement. In the remaining cases the treatment was without result. In the five cases in which the treatment was only partially successful, potassium iodide internally and iodine oint-

ment externally also failed. Four patients, who were seen from three to five months after the cessation of treatment, were found to be in the same condition as at its close; the explanation being apparently that in hyperplastic struma the gland substance functionally hypertrophies, and upon the administration of the extract this hypertrophy retrogrades, provided that secondary changes have not supervened.

Thyroidism.—Lanz[5] calls attention to the need of a more precise understanding of the effects of the ingestion of thyroid gland and its preparations.

Symptoms of intoxication due to the gland itself may be expressed, after many analogies, as thyroidism.

Experiments show that different preparations vary much in their effects. Fresh glands are much less toxic than various preparations, so that some of the symptoms reported as following thyroid-feeding may be looked on as meat-poisoning.

Nevertheless there are symptoms which may follow large doses of fresh thyroid, and so deserve the name mentioned above. These are: rapid increase of the pulse-rate with a rise, followed by a fall of the blood-pressure, emaciation, paresis of the lower extremities, and alteration of the mental condition. By over-feeding of pregnant animals with thyroid-preparations, symptoms of thyroidism have appeared in the young—a fact of importance in human pathology and therapeutics.

Dr. Jevzykowski[6] reports ten cases of **Corpulence** treated with the dried thyreoidin manufactured by Merck. This preparation was given in doses of from 5 to 8 grains per diem, 10 grains being the equivalent of a thyroid gland from a medium-sized calf. It did not give rise to any unpleasant effects such as have been noticed by some observers. In one case, however, that of a patient with **Fatty Degeneration of the Heart** suffering from occasional attacks of an anginal character, after some three hundred 5-grain doses had been taken, which had reduced the weight about 25 lb., a considerable amount of dilatation of the left auricle was diagnosed, and the heart's action was weakened; this state of things lasted for about a fortnight, but afterwards the patient completely recovered and lost all tendency to anginal attacks.

Speaking generally, Dr. Jevzykowski found that a very considerable decrease of weight was produced by the treatment, at all events where the patients were willing to give up their previous habits of over-eating and over-drinking. In one case more than 40 lbs. were lost in two months, and in another 30 lbs. in three months.

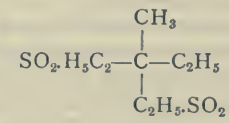
Dr. Jevzykowski also tried the dried thyroidin in a case of inveterate

Ichthyosis, the skin regaining its ordinary character after five weeks' treatment. When the thyroidin was left off, however, the disease began to reappear; another course of the remedy in increased doses again improved it, and when the patient was last seen there were no signs of any recurrence.

REFERENCES.—[1] "Lancet," Dec. 24, 1895; [2] "Hoppe Seyler's Zeit. f. phys. Chem.," vol. 21, and "Münch. med. Woch.," April 7, 1896; [3] "Journ. of Men. Sci.," 1895, No. 139, p. 636; [4] "Wein. klin. Woch.," 1895, No. 41, S. 715; [5] "Correspondenz-Blatt für schweizer Aertze," No. 22, 1895; [6] "Lancet," April 4, 1896.

TRIONAL.

$C_8H_{18}(SO_2)_2$, an hypnotic[1] having a composition analogous to sulphonal, occurs in shining tables, soluble in 320 parts of cold water, and melting at 76° C. It is easily soluble in alcohol and ether.



Scognamiglio[2] has made a study of this substance as a hypnotic. He finds that it has very important effects in cases of **Melancholia, Mania,** and many **Nervous Affections.** He endorses the observations of Spitzer in **Pulmonary Affections, Neuralgia,** and other conditions of pain, and mentions surprising results obtained in the lancinating pains of **Tabes.** The author quotes Claus as having found trional useful in very young children, the dose being from 0·2 g. to 1·5 g. according to age. It produces sound physiological sleep in from ten to fifteen minutes. Trional produces no bad effect on either the circulatory, respiratory, or digestive systems. It has been stated by many observers that the exhibition of trional produces hæmatoporphyrinuria. The author made a series of experiments with the drug on dogs and rabbits, and also special observations on the urine of persons who were taking it. In the case of animals, a daily examination of the urine was made with negative results as regards the presence of hæmatoporphyrin (the dose being for dogs 0·5 to 1 g., for rabbits 0·1 to 0·5 g. per diem). The kidneys of two dogs dying during the experiments were submitted to careful microscopic examination, and in each case only hyperæmia was found. On the other hand, in the case of two dogs the dose was greatly increased (3 g. per diem), till on the third day the urine was blood-coloured, and showed the presence of hæmatoporphyrin. In the case of patients

taking the drug most careful examination failed to show the presence of this substance. The author is of opinion that in trional we have a powerful and safe hypnotic when given in doses of 1 to 2 g. per diem, and that in its action it is superior to sulphonal, chloral hydrate, and morphine, and that hæmatoporphyrinuria as a result is greatly exaggerated.

Weber[3] compares the action of sulphonal and trional. He points out that sulphonal is sparingly soluble in cold water, and is slow in its action. Sometimes as long as two or three hours are required for it to induce sleep.

Trional is much more soluble. It produces sleep much more quickly—within a few minutes. In one case the drug was taken before preparing for bed, and its effect was felt so soon that it was an effort for the patient to get into bed. Its action is less prolonged than that of sulphonal. It never produces sleep on the second night as markedly as sulphonal, though patients may sleep well the night after taking it, but not from its direct effect.

The day after taking sulphonal there may be great drowsiness. This is less likely to occur after a dose of trional, and if it does, is much less intense.

Some patients have no difficulty in going to sleep when they first go to bed ; but they wake in a short time and lie awake two, three, or four hours, or may have no more sleep that night. To this class sulphonal is the better drug, as it does not interfere with the first early sleep of the night, and acts later, so that the patient does not wake at midnight, as usual.

The effects of trional do not continue so long towards morning as sulphonal. It gives good refreshing sleep for four or five hours, or perhaps six; then the patient wakes and does not sleep again. In such cases it is possible that the next time a larger dose will produce a longer sleep. The effects of sulphonal are more likely to continue through the whole night until morning.

The dose of either of these drugs is 10 or 20 grains. In many cases 10 grains is sufficient, but where there has been obstinate wakefulness it is better to give more—15 or 20 grains. The writer has only very rarely given 30 grains of sulphonal. He has never had occasion to give more than 20 grains of trional; possibly not having tried it in such obstinate cases. In the case of either drug it is better to give one sufficient dose than two or more insufficient doses.

After taking sulphonal there is not infrequently more or less cerebral heaviness and distress the next day. In a few cases the discomfort has been so great that patients have objected to taking the medicine and

preferred to get along with less sleep. The writer has found much less of this unpleasant effect after trional. One patient, who refused to take sulphonal on account of this after-effect, had little or no discomfort after a dose of trional.

After 15- or even 10-grain doses of trional, slight vertigo or dizziness has been felt before sleep was induced, if the patient rose from bed; lying down caused this to cease. This is not the case after the ingestion of sulphonal. It may be well, therefore, to warn some patients not to rise after taking trional, to wait until fully ready for the night before taking it, and then to stay in bed, so as to avoid this unpleasant experience.

Beyer[4] refers to the recorded cases of trional poisoning. Notwithstanding the frequency with which trional has been used within the last five years, only six cases of poisoning have been recorded, and even these cases will not all stand close examination. Hecker's case is, in the author's opinion, the only one of true chronic trional poisoning. Here there was no hæmatoporphyrin in the urine, and the patient recovered. The author quotes a case of cerebral hæmorrhage in which hæmatoporphyrinuria was observed, and in which no trional or sulphonal had been given. He thinks that the hæmatoporphyrin was here due to intestinal disease, but he cannot say whether this substance passed directly into the urine through a recto-vaginal fistula. Hæmatoporphyrinuria is not only the result of disease of the liver, but also of the hæmatopoietic organs. In one of his cases treated with trional on account of sleeplessness the urine became brown in colour, but here the presence of urobilin in large quantities accounted for the colour. The author maintains that trional should only be given in a single evening dose, and that a smaller quantity is efficient in women than in men. The author thinks that trional is one of the best, if not the best, of hypnotic drugs, and that unpleasant results can easily be avoided with care. Seldom more than 2 grammes, and never more than 3 grammes, should be given.

Goldmann[5] criticises Berger's reported case of trional poisoning. He points out that the patient confessed to having taken 12 grammes of trional in three days, but the access he had to large quantities of the drug rendered his statement unreliable. Again, the symptoms do not agree with those observed by Collatz and by Bötticher as the result of taking 4 grammes of trional. Finally, in the matter of treatment, Goldmann insists strongly on the importance of maintaining a free excretion of urine and fæces in order to prevent the accumulation of unabsorbed trional. He holds that had this been done there could have been no possibility of poisoning by this drug.

REFERENCES.—[1] "Therap. Gaz.," July 15, 1895; [2] "Revista Clinica e Terapeutica," No. 11, 1895, and "Brit. Med. Journ.," March 21, 1896; [3] "Boston Med. and Surg. Journ.," May 23, 1895, and "Medical Annual," 1896, p. 45; [4] "Deut. med. Woch.," 1896, No. 1; [5] "Münch. med. Woch.," 1895, No. 44.

Trional for Children. *Henry Dwight Chapin, M.D., New York.*

Dr. Moncorvo[1] has experimented with trional as a hypnotic in children. It had so far shown good results. It had succeeded perfectly in the insomnia of the eruptive fevers—**Measles, Scarlatina, Variola,**—and in **Malaria.** The dose employed was 3 to 4 grn. before bedtime. In **Tubercular Meningitis** it had secured sleep and tranquillity, which played a large part in the cure of the patient. In pernicious malarial fever, with much cerebral excitement, 8 grn. a half-hour before the paroxysm was expected, procured calm sleep. It seemed of little service in maladies of a painful nature. Children show a peculiar tolerance for trional. Given in warm sweetened milk, between the limits of 3 to 15 grn. in the twenty-four hours, it might be continued several days in succession. In conclusion, trional seemed to be the hypnotic the most prompt to act and the best borne.

REFERENCE.—[1] "Bulletin de l'Acad. de méd.," Sept. 3, 1895.

UREA.

Friedrich,[1] of Buda-Pesth, refering to Klemperer's paper on urea, says that some four years ago he made an experimental investigation into the diuretic action of this product. He attributed the diuretic effect to a stimulating action upon the renal epithelium, resembling that of caffeine. During 1892-93 suitable cases were treated by the author in Korànyi's clinic. In a case of cirrhosis of the liver and intact kidneys, of which the details are given, the urea was gradually increased up to 12 g. in the day; the amount of urine was thus increased seven times. In another similar case a diuretic effect was also visible. In the first case 157 g. and in the other 200 g. were taken, in all without any ill effects. In a third case the urine increased from 400 to 750 c.cm, but the treatment had to be abandoned owing to an intercurrent attack of pneumonia, which eventually proved fatal.

REFERENCES.—[1] "Brit. Med. Journ.," Feb. 8, 1896, June 27, 1896, and "Berl. klin. Woch.," April 27, 1896.

UROTROPINE.

Dr. Arthur Nicolaier,[1] of Göttingen, has given this name to hexamethylenetetramine from certain changes observed in the urine. Under the influence of the remedy diuresis is increased; uric acid and sedimentary urates, previously present in large quantities, no longer appear. The disappearance of these deposits is not a mere con-

sequence of the increased diuresis, but is due to the direct action of the remedy on the uric acid and its salts. These experimental results show that urotropine may be employed not only as a diuretic, but in the treatment of the **Uric-acid Diathesis.**

The drug is especially adapted to the treatment of uric-acid calculi, for after the ingestion of urotropine the urine, without any change occurring in its acid reaction, gains certain properties that make it a uric-acid solvent. If an adult whose urine does not dissolve uric-acid concretions even after several days' retention in the culture oven is given sufficiently large doses of the drug, the urine within twenty-four hours begins to dissolve calculi placed in it, and kept at a temperature of 98·6° F., and this goes on until after several days only the organic albuminous framework of the stone is left. The urine loses its uric-acid solvent properties as soon as the urotropine is all excreted. Even after the use of small doses of urotropine the urine gives an orange-yellow precipitate with bromine water, just as a watery urotropine solution does. This precipitate is dibromide of urotropine. The drug is therefore excreted in the urine; and it passes into it very quickly, being demonstrable in a quarter of an hour after its ingestion. The urine shows the reaction for some time after the use of the remedy is discontinued, the length of time during which this occurs depending upon the size of the last dose. After a single dose of 7½ grains the presence of urotropine can be demonstrated for thirteen hours; after a dose of 15 grains it is demonstrable for twenty-seven hours.

A healthy man was given three times in one day 15 grains of urotropine dissolved in water. The daily amount of urine before the administration of the drug was thirty-four fluid ounces, the specific gravity was 1·021, the reaction was acid; on allowing it to stand, there was a moderate deposit of uric-acid crystals. Uric-acid concrements varying in size from that of a poppy seed to that of a hemp seed were allowed to lie in 7 drachms of this urine for five days at a temperature of 98·6° F., and were entirely unchanged. On the fifth day the urine showed a slight turbidity; its reaction was yet acid. After the use of the 45 grains of urotropine the daily amount of the urine increased to forty-six fluid ounces, its specific gravity was 1·020, its reaction was strongly acid, and no uric-acid crystals appeared even when it was allowed to stand for a long period of time. In 7 drachms of this urine kept at the temperature of the culture oven, the solution of the uric-acid concrements of the sizes mentioned had begun in twenty-four hours; after five days only the organic framework of the smaller ones was left, while in the larger ones there was only a small amount

of inorganic matter remaining in the centre. The urine remained clear during all this time, and its marked acid reaction was not changed. When the urotropine had all been excreted from the body, and the urine gave no reaction with bromine water, the latter ceased to show any solvent properties towards uric acid. The solution of uric-acid concrements was not in any way due to the increased diuresis that set in after taking the drug. Before giving the urotropine the author increased the collected daily amount of urine to forty-six fluid ounces with distilled water, and found that uric-acid stones could lie in it for five days at a temperature of 98·6° F. without undergoing any change at all.

Further researches with the drug have shown that the increased diuresis may be absent in certain cases. They have also shown that, while doses of 120 and even 150 grains may be borne by adults, yet in certain cases, the continued use for lengthy periods of time of daily doses amounting to only 90 grains occasionally causes unpleasant symptoms which call for a decrease in the size of the dose.

Several patients who had taken urotropine in large doses for a time began to complain of a sensation of burning in the vesical region, generally after urinating; these pains radiated along the urethra, and were sometimes accompanied with an increased desire to micturate. The urinary examination in these cases showed only a moderate amount of transitional epithelium, and no other abnormal constituents. If in spite of these symptoms the use of the remedy was persisted in in the same doses, the trouble increased in severity, and occasionally red blood-corpuscles appeared in the sediment. All these troubles disappeared, however, as soon as the dose of urotropine was diminished or its use was discontinued entirely, and the urine soon returned to its normal state. From daily doses of less than 30 grains no ill effects were observed, no matter how long they were continued.

Even daily doses of 15 grains caused the urine to show uric-acid solvent properties in the culture oven. Similar small doses were frequently diuretic in their action also. Experiments made on patients suffering from uric-acid calculi with these doses gave satisfactory results. Indeed, some patients who had albuminuria with casts and red blood-corpuscles in the urinary sediment before the urotropine was administered showed a diminution in the quantity of the albumin and the morphotic elements while under the influence of the drug.

While he was experimenting on these properties of the urine in the culture oven, after the ingestion of urotropine, the author's attention was drawn to another property of the fluid. The urine of patients who

were taking from 45 to 90 grains of urotropine remained clear and retained its acid reaction at a temperature of 98·6° F., even when a few drops of urine in a state of ammoniacal fermentation were added to it. Several specimens of such urine were kept for nine months in the oven, without ammoniacal decomposition setting in. Even after inoculation with pure cultures of the bacterium coli commune these urines remained sterile at 98·6° F. The same thing happened with urines that were the result of daily doses of 15 grains, and frequently with those of 7½ grains daily.

These observations, showed that the use of urotropine hindered the development of micro-organisms, such as the bacteria of the ammoniacal decomposition of the urine and the bacterium coli commune, which latter, as is well known, is a factor in many of the bacterial diseases of the urinary passages. The results of his experiments in this direction show, in his opinion, that the drug ought to be employed in these morbid conditions. Urotropine was used in two cases of **Cystitis** in which the urine was strongly ammoniacal, and was found to be efficacious.

A marked improvement set in, however, when one of the patients was put on a daily dose of 22 grains of urotropine, a tablespoonful of a watery solution being given every two hours. At once after the ingestion of the first tablespoonful the urine drawn off with the catheter was acid, and two days later the entire amount of the secretion was strongly acid. The sediment showed only a small quantity of pus corpuscles and transitional epithelium, and the pains in the vesical region had almost entirely disappeared. That the change in the reaction of the urine and the very considerable mitigation of the pain were due to the action of the urotropine was demonstrated, says the author, by the fact that when the patient received only 90 grains of sodium salicylate daily the urine resumed its alkaline reaction and its ammoniacal odour, and the pains increased again. In fact, the pains were so bad that the patient begged to be put under his former treatment again. The author granted his wish and again convinced himself of the beneficial effect of daily doses of 22 grains. The improvement continued even when he was only taking 15 and 7½ grains of urotropine daily. These doses caused the pus corpuscles to disappear from the urine. When the use of the remedy was discontinued, the ammoniacal smell and the vesical pains returned. Merck's bromaline, even in doses of 75 grains a day, had no favourable effect in this case. At the time of the report this patient was taking 15 grains of urotropine daily. His urine was acid, and he had had no pain. The paresis of the detrusor vesicæ continued.

These observations show, says Nicolaier, that urotropine hinders the ammoniacal decomposition of the urine, and that this effect may be obtained by giving daily doses of from $7\frac{1}{2}$ to 22 grains.

The author has used the remedy in vesical inflammations in which the urine was strongly acid, but the results have not been very evident, and he can not pass judgment on the efficacy of urotropine in affections of this nature.

Dr. Flexner[2] finds that urotropine is non-poisonous even in considerable quantities, is unirritating, is very soluble in water, and is as good a uric acid solvent as formic aldehyde itself.

The name urotropine was given to it on account of the changes which its administration brought about in the urine.

Alkaline and putrid urines containing mucus in excess, pus and pus organisms, uric acid, or amorphous urates, were rapidly restored by it to a normal appearance and an acid reaction. The urine was sterilized and increased in quantity, and calculi and deposits were dissolved.

The author finds that urotropine is a most valuable resource in **Suppurations of the Urinary Tract** and in **Gouty and Rheumatic Conditions** where an active eliminant of uric acid and its salts is indicated.

A further property of urotropine is its faculty of combining readily with salicylic acid and forming a soluble combination. A solution containing from 10 to 15 grains each of urotropine and salicylic acid to the fluid ounce of water or other suitable vehicle has the further advantage over the salicylates alone that its taste is not disagreeable. It appears to be far less irritant to the gastric mucous membrane than solutions of salicylic acid.

REFERENCES.—[1] "Deut. med. Woch.," Aug. 22, 1895, and "New York Med. Journ.," Oct. 19, 1895; [2] "Amer. Practitioner and News," Dec. 28, 1895, and "New York Med. Journ.," Feb. 22, 1896.

XEROFORM.

This is bismuth tribromphenol. It is a yellowish, neutral, insoluble, fine powder. It is an antiseptic, and has been used as a substitute for iodoform.

Part II.—NEW TREATMENT.

A Dictionary of New Treatment in Medicine and Surgery, 1897.

ABDOMINAL SURGERY. (See "Appendix Vermiformis," "Ascites," "Gall-Bladder," "Hernia," "Intestinal Surgery," "Liver," "Pancreas," "Peritonitis," "Spleen," "Stomach," "Urachus," and "Ureter.")

ABORTION. *Thomas More-Madden, M D., Dublin.*

Jaffe[1] (of Hamburg) believes that artificial abortion is justified, first, in cases of incoercible vomiting of pregnancy; second, where the uterus is suffering from extreme retroflexion or prolapse, or where there is a hernia which is in danger of strangulation; also in pernicious anæmia, in grave chorea, or where emphysema is excessive. Great cardiac dilatation and feebleness may justify an abortion, not only for the purpose of relieving the mother, but also because heart-failure is imminent during labour. It is not to be thought, however, that nephritis is an invariable indication for the production of abortion, as by careful treatment this unfortunate complication can sometimes be tided over.

Very frequently, too, in heart disease, careful treatment by rest and the administration of proper cardiac and systemic tonics will enable the heart to stand the strain both of pregnancy and labour. Should, however, there be any signs of degeneration of the heart muscle, then interference may be necessary.

Dr. Leith Napier[2] has done good service in recalling attention to the value of **Mercurial Preparations** in the treatment of habitual abortion. "Mercury," he says, "in one or other form is the most important uterine alterative. I believe that the practical recognition of this fact has caused many writers to erroneously attribute an exaggerated importance to syphilis as a causative agency of habitual abortion. Ruge states that 83 per cent. of intra-uterine deaths are due to specific influence. Thomas believes that 'except retroflexion, no other cause but syphilis need be esteemed.' Weighty as these opinions are, it is clearly manifest that they are wrong. My own researches warrant my stating that only 9 per cent. of recurrent abortions can be proved

to be due to syphilis. Syphilis is pre-eminently a factor of premature labour, not of abortion."

Mercury has been shown to be of signal value in different forms of anæmia. Cartledge describes its influence on the removal of lymph deposits which become absorbed, and on glandular engorgements which are relieved by it; and explains in a very intelligible manner, what has heretofore been but imperfectly understood, the *rationale* of the therapeutic benefit which follows a course of mercury in many subacute and chronic diseases. From what we know concerning the pathology of endometritis it is needless to point out how mercury will improve the structures affected by lymph deposits, cellular infiltrations, engorgements, etc. Decidual disease is regarded as another great cause of recurrent abortion. And when we recollect that the decidua vera is relatively most developed at the third month, and again about the fourth and seven months (the most usual periods of abortion and premature labour), that the decidua is traversed by blood-vessels and contains open-mouthed tubular channels; but above all that decidual inflammation is generally secondary to endometritis, we can see the direct application which alterative mercurial treatment has on uterine disease, not only in the non-pregnant but in the pregnant condition. Mercurial treatment should be given in most, if not in all cases of recurrent abortion. The drug should be first exhibited about two months after the abortion; or whenever we see the patient at a later date; and continued during the first six or seven months of gestation. Especially is it needful when we find, with a history of repeated abortions, the uterus pathologically enlarged.

Of the *newer uterine sedatives and alteratives* **Viburnum Prunifolium** is the most useful. It certainly acts as an almost immediate uterine sedative in many cases; and in some women who had acquired the habit of aborting I have given it for several months with happy results. It will in some cases relieve strong rhythmical pains, which if continued would almost inevitably cause dislodgment of the fœtus; but it has this peculiarity, that some patients find it of very little service, while others get almost certain relief on taking it.

To relieve strong pains immediately threatening abortion, the green extract in 2-grain doses should be given every two or three hours, or the liquid extract in drachm doses with some tincture of belladonna or of opium, and some spirits of chloroform; the last-named obviates the tendency to sickness which large doses of viburnum are apt to cause. For continued use 25 to 30 minims of the liquid extract, or 1½ grains of the green extract in pill should be given twice or thrice daily.

Assafœtida has been prescribed empirically in cases of abortion for the past forty years. The Italian physicians are its main advocates; of thirty-seven patients who threatened to abort thirty-three were treated successfully. P. Negri, of Venice, prescribes 1½ grn. in pill to be taken twice daily from the beginning of pregnancy. The dose is gradually increased to 10 pills (*i.e.*, gr. xv.) daily, and then gradually reduced till the confinement. It seems that the "reflex" causes are in some way benefited by the gum resin.

Aletris Cordial is of some use in "habitual" abortion; it seems to act as a tonic and sedative to irritable uteri. It is much more agreeable to take than liquid viburnum. A teaspoonful is given three times a day. So far as I know aletris has no immediate sedative action; it will not arrest strong uterine contractions.

Salix Nigra is another remedy which seems of about equal value.

The **Liquor Caulophyllum** et **Pulsatilla** is comparatively little used as a preventive of "habitual" abortion. The value of these medicines in some forms of amenorrhœa has been recognized by homœopaths for long. And in conditions of uterine atony I have seen distinct improvement resulting from it.

Hydrastis Canadensis is now acknowledged to be very valuable in various forms of uterine hæmorrhage. In cases of irregular "accidental" bleeding in pregnancy it is probably the best remedy. It may be given as a pill, or tabloid, or in mixture; **Tincture of Hamamelis** is also useful for the same purpose. I believe these two drugs should always be preferred to 10-minim doses of liquid extract of ergot, which was formerly prescribed for such conditions.

For the immediate arrest of active uterine pains we may find viburnum insufficient. Then we must revert to the time-honoured **Opium** as our only reliable uterine sedative. I have seen opium succeed when viburnum has failed, and have almost as frequently seen the converse. In practice it is judicious to order morphia in combination with viburnum, or give morphine hypodermically and viburnum in pill or mixture. **Nepenthe,** with an astringent such as hamamelis, given every three or four hours has proved serviceable in arresting pains and hæmorrhage in the early months of gestation. A combination of viburnum, nepenthe and belladonna has answered well in other cases.

REFERENCES.—[1] "Ther. Gaz.," June 15, 1896; [2] "Scalpel," Apr., 1896.

ABSCESS (Mammary). *Priestley Leech, M.D., F.R.C.S.*

Mr. Marmaduke Shield[1] thinks that mammary abscess should be a preventable disorder if the medical attendant is careful as to the cleansing of the nipple and of the child's mouth. In certain cases of

mal-development fissures and ulcers will arise, and in such cases abscesses may occur with the best care. He says the vast majority of cases of acute mammary abscess are caused by the direct action of organisms which enter the lymphatic channels, and he has never seen a case in a young woman without finding, perhaps with the aid of a lens, some fissure or ulcer of the nipple. Infection by means of the milk ducts is possible, but not common. He thinks that sub-mammary abscess is much less common than is often supposed.

The most important form of breast abscess is that of an hour-glass shape, called by Velpeau "*abscés en bouton de chemise.*" This form is caused by pus burrowing through a fascia or intra-mammary septum. The opening of mammary abscess by an anterior incision radiating from the nipple is wrong, as it is not opened at the most dependent part. The plan he pursues is as follows: So soon as fluctuation and elasticity are evident an incision is made radiating from the nipple just large enough to admit the index finger; the incision is deepened until pus flows. The finger is introduced and the most dependent part of the cavity is found. Another incision is made at this point, the cavity washed out and a large tube introduced at the dependent opening. The incision near the nipple may be sewn up with fine horse-hair, and a scarcely visible scar will be left.

Tarnier[2] has employed with success and recommends the following formula in which tarlatan should be soaked and then applied to the inflamed area :—

℞ Glycerin	1 pt.	Biniodide of Mercury,	2 to 4 grains
Sterilized Water	6 ozs.	Potassic Iodide	5 grains
Alcohol	1½ ozs.		

REFERENCES.—[1] "Lancet," vol. i., 1896, p. 1199; [2] "Journal des Praticiens," 1896, quoted in "Therap. Gaz.," 1896.

ABSCESS (Retro-pharyngeal). *Priestley Leech, M.D., F.R.C.S.*

Willy Meyer,[1] of New York, discusses in a very interesting paper the best method of incising retro-pharyngeal abscesses. In every other part of the body the surgeon attempts to treat abscesses, and especially tuberculous abscesses, by an antiseptic incision and thorough scraping of the cavity. This rule ought to hold with retro-pharyngeal abscess whatever its cause. The incision from the neck in these cases allows careful exploration of the abscess cavity with the finger; a necrotic piece of the vertebræ may be felt, a tuberculous sequestrum extracted, and the cavity packed in all its angles with iodoform gauze.

Two ways of incising these abscesses from the neck have been proposed. Chiene, of Edinburgh, in 1877, proposed an incision from the mastoid process downwards along the posterior border of the sterno-

cleido-mastoid muscle, and then to go bluntly down with finger and probe to the anterior aspect of the vertebral bodies.

Another method has been suggested by Burckhardt, of Stuttgart, in 1888. An incision is made at the level of the larynx on the inner side of the sterno-mastoid muscle through skin and platysma; the vessels of the thyroid gland are first encountered. Between them on the outer, and the larynx on the inner side the inner border of the common carotid is quickly exposed by blunt dissection. As no branches are here given off from the main trunk, one may safely make in the depth an incision with the knife just at the side of the larynx, or rather the lower end of the pharynx into the thickened tissue which is generally found here in these cases on account of the neighbouring purulent inflammation. If this incision is then enlarged by opening the branches of a pair of slender dressing forceps or similar instrument, the retro-pharyngeal space is fully and easily accessible.

Meyer has operated on four patients by means of this incision, and in one case was able to reach an abscess on a level with the uvula. In another case he opened by this incision an abscess which had previously burst into the mouth. The operation is not difficult. He ends the paper with the following conclusions :—

(1,) In cases of impeded respiration the differential diagnosis of the affections in question should be made as early as possible by gentle digital exploration of the patient's fauces.

(2,) If retro-pharyngeal abscess is present it should be opened by an incision from the outside and not through the mouth, except in weak babies under one year who seem unable to stand general narcosis.

(3.) This is of especial importance in the tuberculous abscess, as digital exploration of the cavity can be made with leisure and the proper antiseptic treatment applied as in other localities. Although Burckhardt's operation is designed for low seated retro-pharyngeal abscesses, it can be successfully applied to those situated high up and even behind the uvula.

(4,) If a swallowed sharp foreign body has perforated the pharyngeal or œsophageal wall this body may be extracted with the help of this incision before an abscess has been caused, or at least before it has spread too far.

(5,) The operation is not difficult and presents no special dangers. It should be performed with the patient in Rose's posture.

(6,) It has yet to be determined which incision deserves the preference, Chiene's or Burckhardt's.

REFERENCE.—[1] "Amer. Med. and Surg. Bulletin," April 4, 1896.

ABSCESSES (Stitch). (See "Amputations.")

PLATE I.

ACCIDENTS (by Electricity). *Priestley Leech, M.D., F.R.C.S.*

Now that the use of electricity is becoming so common, the following hints[1] may prove useful: (1,) Shut off the current at once if possible, and there is any person present who knows how to do it; (2,) If this cannot be done, do not touch the injured person's body with the naked hand; if rubber gloves are not at hand, drag the body away from the wires by the coat tails; (3,) If it is not possible to remove the injured person from the wires, raise that part of the body that is in contact with the earth or wire from the earth or wire, covering the hand with a dry piece of cloth. This will break the current and it will then generally be possible to get the body away; (4,) If this cannot be done take a dry cloth and place it between the body and the ground, and then disentangle the body from the wires; (5,) Treat the person as in drowning; seize the tongue with a cloth, pull it forwards and let it fall back gradually; this movement should be repeated sixteen times a minute; (6,) Do not allow wines or spirits to be given.

REFERENCE.—[1] "Med. Press" quoted in "Med. Record," Dec. 28, 1895.

ACNE. *P. G. Unna, M.D., Hamburg.*
Norman Walker, M.D., Edinburgh.

The illustration *(Plate I)* represents the severer form of acne vulgaris. The boy had suffered for some years, and no treatment had been attempted. The result was that large abscesses had formed on the cheeks and forehead, which were beyond any but surgical treatment. They were opened and swabbed out with **Carbolic,** and he was directed to wash the face regularly with **Eichoff's Sulphur Camphor Soap.** Although new abscesses formed, the progress of the case was steadily onward, and the boy's face is now nearly well, although, of course, scarred. If the personal appearance is a matter of great consideration, the scarring which is left after such a case can be very much improved in appearance by repeatedly shelling the epidermis by the use of a 50 per cent. **Resorcin Paste.** This should be applied once or twice daily for three or four days. This method of treatment is of no great value in the acuter stages of acne, when it tends to aggravate the inflammatory symptoms.

Hyde[1] recommends that in sensitive cases the comedones should be first removed with an extractor, the skin then disinfected with 1 or 2 per cent. of **Formalin,** and then massaged with an indiarubber ball fixed in a handle. This is in addition to the regular method of treatment.

Brocq advises that acne of the neck be treated by a solution of

Resorcin, which is allowed to dry into a powder. At a later stage he recommends **Ichthyol Plaster.**

Hebra and Ullmann recommend the following paste :—

℞	Subnitrate of Bismuth	Ichthyol	āā 2
	White Precipitate	Vaseline	20

Another prescription[2] is :—

℞	Saponis Nigri	parts 52	Zinci Oxidi	parts 6
	Aquæ	parts 27	Essentiæ Lavandulæ	q.s.
	Vaseline	parts 15		

Ehrmann[3] reports two cases resembling acne keloid, which he succeeded in curing by the **Electrolytic Destruction** of the diseased hair follicles.

REFERENCES.—[1] "Journ. Cut. Dis.," March, 1896; [2] "Med. Record," Nov. 9, 1895; [3] "Archiv. für Derm. und Syphilis," Band 32, Heft 3.

Synopsis.—(Vol. 1896, p. 153.) Friction with **Marble Dust** or **Pumice Stone.** Holsten advocates **Arsenic** at a late stage. Winfield used **Ergot** if menstruation is irregular. Massage is deprecated by the believers in the specific acne bacillus theory, on account of spreading infection. Schütz condemns glycerine or glycerine soap, and uses a weak solution of **Acetic Acid** for washing face after using soap. Philippson opens pustules and covers them with **Salicylic Plaster,** 50%. ℞ Naphthol, 10 parts; Vaseline, Sapo. Viridis, āā 20 parts; Sulph. Præcip., 50 parts. M. et ft. pasta (Lassar). ℞ Camphor Trit., Vaseline, āā 10 parts; Pulv. Cret. Alb., 5 parts; Sapo. Virid., 15 parts; Sulph. Præcip., 50 parts. M. et ft. pasta (Lassar). ℞ Resorcin, Amyli Puri, āā 5 parts; Vaseline, 15 parts; Zinci Ox., 5 parts. M. et ft. pasta. And the following wash: ℞ Ac. Acet. Conc., Tinct. Benzoini, Sp. Camph., āā 6 parts; Spirit q.s. ad 100 parts. M. *Sig.*—Apply with sponge night and morning (Lassar). Purdon advises **Oil of Amber;** Jamieson, a mixture of **Ichthyol,** 1 part; **Water,** 3 parts; Walter Smith, application of **Pure Carbolic** covered by **Flexible Collodion.**

ACROMEGALY.

Græme M. Hammond, M.D., New York.

In the report of an interesting case of acromegaly, in St. Mary's Hospital,[1] under the care of Sir W. H. Broadbent, X-ray photographs taken of the hands and feet show that the great increase in bulk was due to an over-growth of the soft tissues, and not to an alteration in the bones. Another feature worthy of remark was the improvement in the patient's mental condition after the administration of an **Extract of Pituitary Body.** This remedy has not yet been tried to any great extent in this disease, and its effect cannot therefore be prognosticated with any certainty, but in view of the results so far obtained, it is certainly well worth trying.

Bruns[2] reports a case in which marked benefit was noticeable after the administration of **Thyroid Extract.** Tablets of the extract (quantity not stated) were given in increasing doses until 4 a day were taken. The enlargement of the parts persisted, but the im-

provement in the subjective symptoms was striking; the nervous excitability rapidly subsided, the patient slept well, and the headache disappeared; the pains in the extremities also vanished, and the patient was able to resume the finest work.

Sears,[3] of Boston, reports a case considerably benefited by thyroid extract. General tonics were given, together with the dried extract of thyroid gland, in gradually increasing doses until 12 grains a day were taken. There was no diminution in the size of the enlarged parts, but in every other way the patient was greatly improved. She lost over twenty pounds in weight, but felt stronger than she had done for many months.

Murinisco[4] reports three cases treated by the administration of pituitary gland. Two cases were of the "massive type," and one of the "giant type." The general condition improved under treatment, but there was not the slightest diminution in the size of the hypertrophied members. There was increased diuresis. The author believes the disease is caused by a functional disturbance of the pituitary gland, but rejects the hypothesis of Tamburini and Massolongo, that the hypertrophy is the result of hyper-secretion of the gland. In a few cases it has been demonstrated that the gland has suffered a change, and that the cells had been supplanted by elements which had not the power of supplying the normal glandular secretion.

REFERENCES.—[1] "Lancet," March 28, 1896; [2] "Brit. Med. Journ.," Jan. 18, 1896; [3] "Lancet," Aug. 29, 1896; [4] "Braithwaite," June, 1896.

ACTINOMYCOSIS. *Priestley Leech, M.D., F.R.C.S.*

The mode of infection in this disease is very often problematical. Hummel[1] says, notwithstanding its frequency in man, only twelve cases are reported in which the mode of infection is known with certainty. In these it was due to the presence of a barley-corn or some other kind of grain, and the disease occurs most frequently among workers in grain who are in the habit of chewing it. The author believes that actinomycosis is not communicated from animals to man, nor by eating the flesh or milk of diseased animals.

The most frequent carriers of the disease are pieces of grain that are forced into the mucous membrane or into carious teeth; even if these are not found it does not invalidate the theory since they soon disappear.

Dr. Grill, of Tübingen,[2] reports a unique case of actinomycosis of the stomach and two cases of the same disease of the intestine, and makes an analysis of one hundred and seven cases collected from literature. The results of his observations are: Actinomycosis of the

abdomen is the most frequent next to that of the head and neck. The disease cannot be produced by feeding animals on the fungus, but some abrasion of the intestinal tract is required, and it is probably caused by swallowing uncooked grain, and the sharp edges of the grain wound the mucous membrane and thus provide a place of entry for the fungus. Probably man and animals are infected from a common source. Men suffer more frequently than women, and adults more frequently than children. No disease of the abdomen causes such widespread destruction, due partly to the inflammatory action about the disease and partly to the extensive suppuration from mixed infection. Any part of the intestine may serve as the starting-point, but the region of the ilio-cæcal valve is most frequently affected. If the disease start from the colon, the suppuration is usually retro-peritoneal; when the site of the lesion is in some part of the intestinal tract which has a mesentery, abscesses of the abdominal wall are usually formed. The disease spreads by involving contiguous structures, but not unfrequently metastatic deposits are found in the liver or other organs. Owing to their large size the spores are never carried by the lymphatics.

The clinical picture is various, but three stages can be distinguished :—

(1,) *The Stage of Commencement*, characterized by numerous indefinite symptoms referable to the abdomen—diarrhœa, constipation and pain. The symptoms sometimes simulate appendicitis, and have led to operation in a few cases.

(2,) *Stage of Tumour Formation.*—The first diagnostic sign is the presence of a tumour in the abdominal walls, most frequently in the ileo-cæcal region. The tumour has an inflammatory appearance, but is seldom painful. It gradually increases in size, and if not incised it breaks through the skin and discharges a quantity of pus.

(3,) *Stage of Suppuration and Formation of Fistulæ.*—When the tumour breaks and discharges, deep fistulæ are formed which do not readily heal. The pus is not characteristic, but the microscope shows the presence of the fungi, and they can also be found in the walls of the fistulæ.

The prognosis is best in those cases in which the abdominal wall is involved early, and the abdominal viscera not extensively diseased. In seventy cases forty-five died, twenty-two were cured, and ten were improved.

TREATMENT.—The treatment is to open all tumours and fistulæ freely and scrape them out. It is probable that the mixed infection has a tendency to prevent the growth of the fungus.

Dr. T. G. Savchenko [3] relates a case which, clinically speaking, was one of actinomycosis. A tumour involving the left side of the chest and axilla burst and discharged from fistulæ pus of a peculiarly disagreeable odour. This unpleasant smelling pus was present throughout the whole course of the disease, and contained a number of whitish granules. The granulations occupying the sinuses were of a brown colour, very easily broken down, and contained a large quantity of blood. The granules when examined with a low power of the microscope did not look unlike those of actinomycosis, but with a high power it was found that they were distinct, being in fact zoöglœa made up of numbers of bacilli differing from one another in size. Bacilli were also contained in the pus apart from the granules, some being free and others within leucocytes. The bacteria were all stained by aniline colours, but not by the Gram stain. They were anaërobic, and never formed colonies on the surface of nutrient media. In glycerine jelly isolated granules were formed consisting of bacilli. A rabbit inoculated with a pure culture always presented an abscess in which the same bacilli were found and which had the same smell that was noticed in the patient. Dr. Savchenko proposes the name of "pseudo-actinomycosis" for this disease.

REFERENCES.—[1] "Beiträge zur Klinische Chirurgie," Band xiii., Heft 2, 1895; [2] Ibid., Band xiii., Heft 2, also "Annals of Surgery," Jan., 1896; [3] "Lancet," May 16, 1896.

P. G. Unna, M.D., Hamburg.
Norman Walker, M.D., Edinburgh.

Jurinka gives the details of three cases successfully treated by **Iodide of Potassium.** It seems to be now beyond doubt that this drug is of real value in this affection. Rydgier,[2] in addition to the internal administration, also injects a 1 per cent. solution into the diseased mass.

REFERENCES.—[1] "Mittheilungen aus den Grenzgebieten der Med. u. Chir.," June, 1896, Bd. 1, Heft 2, p. 139; [2] "Wien. klin. Woch.," Sep. 12, 1895.

Synopsis.—(Vol. 1896, p. 155.) Stoube successfully applied a plaster of Chrysarobin, Resorcin and Ichthyol.

ADENOIDS (Post-nasal). *W. Arbuthnot Lane, F.R.C.S.*

I shall here consider the treatment of inflammatory states of the pharyngeal tonsil, or, as described more commonly, of adenoid growths in the naso-pharynx.

There is, perhaps, nothing on which surgeons seem to be so thoroughly agreed as upon the treatment of this condition, though they differ widely amongst themselves as to the particular manner in which the removal of the tonsil is best effected.

Some are satisfied to introduce the index finger and with the nail to scrape out more or less ineffectually the offending masses, often without an anæsthetic; while others adopt more radical measures and use sharp spoons and knives for the purpose. It is curious that all methods appear to afford surgeons equally good results. I would protest very strongly against the operative warfare that is being waged indiscriminately against this organ, often on the slightest possible provocation. Not only do I believe that the operation does very little good that cannot be done more effectually by the application of scientific principles, but I have known it not unfrequently followed by harm, and I have heard of quite a considerable number of deaths that have resulted directly or indirectly from it.

If a determined effort is made to remove this tonsil thoroughly, the operative procedure is a bloody one, and not to be undertaken lightly without the services of an anæsthetist accustomed to administer anæsthetics under such circumstances. The operation also makes a considerable demand on the skill of the operator, perhaps more than is possessed by all those who undertake it.

In order to formulate a treatment it is well that one should first obtain some knowledge of the scientific principles on which such treatment must be based. To do this it is necessary to obtain a clear idea of the factors which produce the condition in question.

The structure of the pharyngeal tonsil differs very slightly from that of the faucial tonsil, and from the lymphatic glands in the neck. The physiology of these several organs is very similar. Their inflammation is brought about by the same causes, namely, by the action of organisms and their products.

The pharyngeal tonsil occupies such a position in relation to the posterior nares, and to the Eustachian tubes, that its enlargement results in a more or less complete impairment of the functions of the naso-pharynx, namely, its air-transmitting capacity, and it interferes with the escape of mucus from, and with the entry of air into, the middle ear. It, therefore, frequently causes the destruction of the middle ear by an inflammatory process, and a subsequent impairment of the function of the internal ear.

The faucial tonsils become infected sooner or later, and then the lymphatic glands in the neck which receive their afferent supply from these structures become enlarged also. These last, if inflamed for some time, are very frequently indeed attacked by the tubercle bacillus as well, which requires a special form of treatment for its successful eradication. If the interference with the physiology of the naso-pharynx lasts sufficiently long, such conditions of imperfect development

of this tract and of the structures dependent upon its development, as have been already described, result. This means that during the whole of adult life the patient suffers from such conditions as accrue from the possession of a very important organ which does not perform its functions in a satisfactory manner. Any little strain thrown upon this imperfectly developed structure causes a breakdown of the machinery, and often makes it necessary to adopt some operative procedure in order to partially restore the functions of the part.

Not only do the pharyngeal and faucial lymphatic structures and the lymphatic glands in the neck become affected, but the larynx is frequently attacked also, and the inflammatory process may extend down the tubes to their terminal ramifications, producing bronchitis and broncho-pneumonia. A slight condition of inflammation of the upper aperture is very often present and is manifested clinically by a frequent husky cough, since the child feels the desire to clear this orifice from mucus.

The primary source of these troubles is such an infection of the naso-pharynx as is popularly described as a cold in the head. Clinically, this means that the mucous membrane of the naso-pharynx is inflamed and swollen, diminishing very considerably the lumen of this air-passage. Added to this we have a more or less abundant discharge of inflammatory products which complete the obstruction.

The extent to which the upper part of the naso-pharynx is involved varies. In some cases the Eustachian orifices and channels are implicated also. The pharyngeal tonsil becomes infected secondarily, and helps to block the way more completely, compelling the escape of mucus through the anterior nares.

The accumulation of stagnant secretion in the nares results in an aggravation of the several conditions, and if the inflammation does not subside, and if the naso-pharynx is not freely ventilated, the state becomes a chronic one, and as such the child is said to be suffering from obstruction of the naso-pharynx produced by post-adenoid vegetations.

Let us divide children roughly into three groups: The first comprises the vigorous active child that breathes freely with the chest, whose lungs are habitually thoroughly ventilated, whose blood is consequently well oxygenated and the vitality of whose tissues is very considerable. Such a child suffers comparatively rarely from this infection of the naso-pharynx, but when it does so, it is not satisfied to allow the mucus to remain stagnant in the air-passages, but expels it by forcible expiratory or inspiratory efforts, and ventilating it, soon restores its mucous membrane to the normal condition.

The second comprises the child with an enfeebled vitality, which forms a large proportion of the sufferers from this trouble. Such a child breathes habitually only with the diaphragm. This, as I have shown, makes a much less demand upon the energy of the individual than does the variation in the capacity of the chest, which is necessarily associated with erection of the spine, brought about by the action of the internal intercostal muscles, and also of that portion of the internal oblique muscle of the abdomen whose fibres continue the direction of and are on the same plane with the internal intercostals.

(The action of the internal intercostal muscles is incorrectly described by anatomists as expiratory, but they seem to me to have a very confused and wrong idea of the physiology of thoracic respiration.) In other words, inspiration produced by the diaphragm is a much more perfect reflex than that which is brought about by the contraction of the internal intercostal muscles. Such a child does not use these intercostal muscles, and consequently its dorsal spine and thorax occupy the position of rest or of passive expiration. The public describe the child as being round-shouldered, and when the resting posture becomes fixed from its constant assumption, the surgeon calls it dorsal excurvation.

When the child falls into the habit of assuming the asymmetrical posture of rest, and never erects and renders symmetrical the dorsal spine by the only muscles that are capable of doing so, namely, the internal intercostals, the posture becomes fixed and is called lateral curvature or scoliosis by the surgeon who altogether fails to grasp its causation. These conditions are considered fully in the Lecture in the "Clinical Journal," and I merely refer to them here to show that the so-called adenoid obstruction cannot be considered apart from the physiology of the rest of the body. To treat one it is absolutely necessary that a surgeon should be thoroughly familiar with the others. That is, I believe, the reason why the surgery of the nose and throat does not rest upon the soundest of foundations. When the naso-pharynx of one of these children becomes infected, the condition very readily becomes chronic, since the vitality of the tissues is low, and the energy requisite to ventilate the naso-pharynx spontaneously does not exist. As one would expect, girls from their mechanical relationship to their surroundings, are much more frequently affected than boys.

To meet these conditions it is necessary not only to teach the child to ventilate the naso-pharynx, but also to improve its general energy and the vitality and nutrition of its tissues by making the sufferer use

its internal intercostal muscles habitually. This must be done regularly and systematically till the obstruction of the naso-pharynx has disappeared and the child habitually alternates positions of activity of the thorax with those of rest. To cut or scrape away the pharyngeal tonsil is only called for in the poor, who will not carry out instructions, or in the young child who cannot be taught. Then the obstruction is only relieved temporarily, unless after the operation the naso-pharynx can be ventilated and the general condition improved. Under usual circumstances I consider that the operation is unnecessary and unscientific.

The third group includes those children who, besides possessing the conditions present in the second class, are affected with the conditions of malnutrition which are clumsily comprised under the unscientific term "rickets." This, as I understand it, represents a stage or phase in a sequence brought about in a simple and definite manner, and has no claim whatever to be considered apart from the rest.

In these children the normal lumen of the naso-pharynx is encroached upon by the abnormal increase in the thickness of the bony and cartilaginous boundaries of this cavity. I need hardly point out the importance of attending carefully to the diet in these cases, in order that the bony and cartilaginous walls of this tract may be restored with the corresponding structures in the rest of the skeleton to their normal bulk. To expect to cure such a child of a chronic cold in the head by removing more or less of the adenoid tissue of the pharynx is manifestly absurd. Still, the obstruction may be considerably relieved by operative interference if the surgeon is able to ensure a proper supply of air and of food at regular intervals.

What I have tried to point out is that while the operation for the removal of adenoids is useful under certain circumstances combined with other treatment, its present indiscriminate and frequently unaided application is bringing considerable discredit upon surgery.

Without intending for one instant to impute in the slightest degree any want of scientific accuracy to anyone, I would say that experience has taught me to place no reliance whatever upon statements made as to non-recurrence of adenoids after operation, if by that is understood that the patient is permanently cured of obstruction of the naso-pharynx by the operative procedure of the surgeon.

REFERENCE.—[1] "Clinical Journal," July 1, 1896.

ALBUMINURIA.

Synopsis.—(Vol. 1896, pp. 55 and 62.) The use of the **Glycero-Phosphates. Tannigen** seems worth a trial.

ALOPECIA.

Synopsis.—(Vol. 1896, p. 156.) For stimulation, **Tinct. Cantharides, Nux Vomica, Capsicum** or **Quinine**, made up with oil if scalp be dry, or with alcohol if it be greasy. **Lassar's Ointment**—Pilocarpine, 15 grs. to ℥j.

ALOPECIA AREATA. *P. G. Unna, M.D., Hamburg.*
Norman Walker, M.D., Edinburgh.

Cantrell[1] uses strong **Galvanic Currents**, and **Cantharides** or **Nitroglycerine** internally.

Sabouraud,[2] in a series of articles, maintains that the disease is not an affection of the hair, but of the skin, and that the examination of the last stage gives no suggestion of the origin of the disease. If, however, the earlier stages are examined, the constant presence of a micro-bacillus may be determined, and he suggests that this is the cause of the disease. He admits that it is not proven, but since it is present in numbers in the active progressive stage, and no longer to be found when the affection is complete, he considers that there is strong presumptive evidence in its favour.

Under this heading we may briefly allude to a paper by Dubreuilh[3] on that form of ringworm known as *bald ringworm*, which sometimes so closely resembles alopecia areata as to be almost indistinguishable from it. Point-of-exclamation hairs may be found, and the resemblance to alopecia is especially marked after a case has been treated with sulphur ointment. There is, however, in such cases slight scaling which is rarely, if ever, present in alopecia areata.

Dubreuilh believes that it is these cases of acute bald ringworm which have led certain English authors to maintain a relationship between ringworm and alopecia areata. In this, however, we must protest that our friend, Dr. Dubreuilh, is wrong.

REFERENCES.—[1] "Philadelphia Polyclinic," Dec. 21, 1895; [2] "Annales de derm.," 1895, Nos. 3, 4, 5, and 6; [3] "Brit. Journ. of Dermatol.," Nov., 1896.

Synopsis.—(Vol. 1896, p. 157.) Sabouraud blisters, removes the cuticle, and then paints with 1 to 15 **Nitrate of Silver Solution**. Stoker uses **Oxygen** under a rubber apparatus. Beevor administers **Thyroid Tabloids**. Gautier claims success for **Metallic Electrolysis**.

AMENORRHŒA. *Theophilus Parvin, M.D., Philadelphia.*

Lutaud[1] recommends gymnastic exercises, hydrotherapy, sea-bathing, and saline spring baths. Often the following tonic prescription will prove useful:—

℞ Bichloride of Mercury
Arseniate of Sodium
Strychnine Sulphate āā gr. 1
Potassium Carbonate
Sulphate of Iron āā grs. 30

M. ft. in pil. no. 60. Sig.—One pill after each meal.

If for any reason it is thought that the stomach is too feeble or irritated to take the mercury, the following may be substituted :—

℞ Arseniate of Iron grs. 2 | Sulphate of Manganese grs. 75
Ext. of Nux Vomica grs. 15 |

M. ft. in pil. no. 60. Sig.—One pill after each meal.

Should constipation be a prominent symptom in the case, the following prescription may prove of value :—

℞ Carbonate of Iron | Syrup q.s.
Ammonia
Aloes (Socotrine) āā grs. 75 |

M. ft. in pil. no. 60. Sig.—One after each meal.

When the amenorrhœa is accompanied by obesity, active purgation must often be employed, and increased at the approach of the period. Thus :—

℞ Aloes grs. 15 | Savin grs. 7
Rue grs. 7 |

M. ft. in cachet. no. 10. Sig.—One after each meal, or the oils of savin and rue may be used.

REFERENCE.—[1] "Therap. Gaz.," Nov., 1895.

Synopsis.—(Vol. 1896, p. 157.) ℞ Absinth (Artemisia Absinthium), Armoise, incised (Mugwort), āā grs. xx; Aq. Bull., Oij. Steam the genitals with this solution, and give **Carbon Sulphuret**, 2 drops in sweetened water. **Fluid Extract Senecio** regulates and increases flow in the absence of anæmia, 20 drops q. d. in water. **Oxalic Acid** is best combined with iron salts, *e.g.*, ℞ Ferri Peptonat., grs. 13; Mangan. Peptonat., grs. ij; Ac. Oxal., grs. ij; Alcohol., ʒiij; Aq. q.s. ad ʒiv. M. *Sig.*—ʒij t.i.d.

AMPUTATIONS AND RESECTIONS. *Priestley Leech, M.D., F.R.C.S.*

Hip-joint.—Dr. Wyeth [1] has modified somewhat his method of amputating at the hip-joint by placing the pins at a higher level. The near pin is inserted through the tendon of the adductor longus muscle close to the bone; the other well above the trochanter, so that the rubber tube rests just below the anterior superior iliac spine. In this way one can disarticulate without removing the rubber tourniquet or experiencing any inconvenience from its presence.

Dr. Chalot [2] suggests the following method for preventing hæmorrhage in amputation at the hip-joint. He has employed it with success in one case, and only a small amount of blood was lost. A slightly curved incision 4 or 5 centimètres (1½ to 2 inches) in length, about 2 centimètres (each 1 inch) internal to the anterior superior iliac spine is made, and the anterior abdominal muscles divided so that the peritoneum can be easily raised from the iliac fossa. When this is done the common iliac artery can be felt on the inner border of the psoas muscle. An assistant places on the artery the tips of the middle and

ring fingers of the left hand for the right side of the patient, and of the right hand for the left side, at the same time grasping the iliac crest with the forefinger and thumb, while the little finger rests on the abdominal wall. The compression is made against the ala of the sacrum, and its efficacy is judged of by the cessation of the femoral pulsation.

Quénu[3] has introduced a new method of amputation at the hip-joint by which the bleeding is reduced to a minimum. After double ligature and division of the common femoral artery and vein he traces an internal flap, the length of which is equal to the diameter of the root of the limb. At first the skin only is incised and freely detached from the subjacent parts. The sheath of the femoral vessels is next opened along the inner border of the sartorius, and the attachment of these vessels to surrounding muscles is separated by the finger. The pudic arteries are now tied together with the internal saphenous vein near its opening into the femoral vein. The internal circumflex artery is then tied at the middle of the external border of the pectineus. The external or superior border of the adductor brevis having been drawn inwards, the femoral artery is displaced inwards, and the profunda and its muscular branches are exposed. This artery is now tied, and the long and short adductors and the internal vastus are divided. The sciatic nerve and its accompanying artery are next exposed and divided. After rapid section of the rectus, sartorious, and gluteal muscles, the head of the femur is disarticulated, or the bone sawn through just below the cotyloid cavity.

Dr. Tilden Brown[4] describes a new method of removal at the hip-joint which will be useful in cases where the surgeon is undecided whether excision or amputation is the better treatment. Barker's incision is first made between the sartorius and rectus on the inner side and the tensor vaginæ femoris and glutei on the outer side. Should the case be unsuitable for excision one jaw of a specially devised clamp is introduced into the wound, under the sartorius and under the femoral vessels close to Poupart's ligament; the other jaw is outside the wound bearing upon the cutaneous surface overlying the vessels. As the clamp is tightened pulsation in the femoral below the clamp cannot be felt. The handle of the clamp rests upon the abdomen. The incision is then extended along the outer border of the rectus downwards to the bone and through this deep incision; the remaining attachments to the joint and femur are stripped off. A circular skin flap is cut and a cuff turned back. Some of the small branches of the sciatic system required the application of pressure forceps, but the femoral vessels and their branches are absolutely dry on the proximal

side. Gradual loosening of the clamp by stages permits the seizure of the bleeding points in the order of their importance.

Leg.—Bier, in 1892, described an operation for the plastic formation of feet. Bier's cases and one other are the only ones that have been published. The other one is thus described by Dr. Ritschl, of Freiburg.[5] A patient suffering from the loss of both feet from freezing came into Prof. Kraske's clinique in Frieburg. An ordinary circular amputation was done and the wounds healed. Two months later Bier's operation was performed on both legs in the following manner: Two horizontal incisions were made across the front of the leg; the lower one was convex downwards and was placed about 3 centimètres (1¼ inch) above the lower end of the stump. The upper incision was convex in the opposite direction, and placed 4 centimètres higher. At the sides of the leg these two incisions were joined together by vertical incisions, the inner one along the inner margin of the tibia and the outer one along the posterior angle of the fibula. The soft parts included between these two incisions were removed down to the bone. A wedge-shaped piece of bone, broadest in front, involving the whole thickness of the bone, was removed and the sawn surfaces so arranged that when brought into apposition the lower fragment stood at right angles to the shaft of the bone. The lower fragment was held in place by catgut sutures, and a splint was applied to the leg after the dressings were put on. Five months later the patient was provided with boots resembling those used after Pirogoff's amputation, and was able to go about very well with the aid of a cane.

Bier claims the following advantages for this operation :—

(1,) The evil from atrophy of the bones and muscles is avoided.

(2,) The gait is more steady, and constantly improves.

(3,) No ulcers form about the head of the tibia—a frequent cause of annoyance when a prothesis is used.

(4,) No danger of a conical stump forming.

(5,) The expense of the shoes and keeping them in repair is much less than that of a prothesis.

Elbow and Knee.—Miller[6] considers the following the best method of forming the flaps in disarticulation at the elbow and knee. The limb is held out quite straight, a circular incision is made in the ordinary manner below the condyles (1½ inches in the arm and 2½ in the leg) down to the deep fascia. The skin on the flexor aspect at once retracts considerably, making the line of incision oblique. Two small incisions are now made from immediately below the condyles to the original cut. The flexor flap will now still further retract, and aided by a few touches of the knife will almost disappear. The

extensor flap is now dissected up as far as the head of the tibia in the leg, and to above the olecranon in the arm, care being taken to cut on the deep fascia and so to reflect the subcutaneous cellular tissues and its contained blood-vessels along with the skin. This flap is loose and ample. After reflexion of this flap—practically the only one—disarticulation should be performed (on the arm and knee) both from the front, the patella being saved in the latter case. It will then be found that there is a long flap on the extensor aspect with practically no flap at all on the flexor aspect of the condyles.

After the blood-vessels are secured and the nerves drawn out and cut short, this single flap folds nicely over the condyles, being, indeed, in its natural place, and is easily secured by stitches.

Miller claims the following advantages for this plan: There is a single long skin flap; the procedure is simple, being easily and quickly performed, and there are no elaborate details to be remembered; the skin over the extensor aspect is well accustomed to pressure and to the situation in which it is ultimately placed over the condyles; the cicatrix is in a most favourable position; much tissue is not required. The operation is therefore suitable for both primary and secondary amputation.

Foot.—Prof. Landerer,[7] of Stuttgart, recommends the following operation in extended carious disease of the tarsus and ankle, and in necrosis from osteo-myelitis of the calcaneum. An incision is commenced at or above the insertion of the tendo-Achillis; it is continued downwards in the middle line over the heel, and forwards as far as is necessary into the sole of the foot. By this incision nothing is divided but adipose tissue, the fascia plantaris and the flexor brevis digitorum, this latter being divided parallel to its fibres. The external plantar artery may be wounded if the incision goes far forwards.

The division of the tendo-Achillis into two parts is no drawback.

The two edges of the wound are held apart with hooks, and with the help of a raspatory the tarsal bones can be easily removed. The diseased calcaneum can be split with the resection knife, and one has an open hollow in which all the details can be easily seen.

Landerer has with this incision easily scraped out 7 c.m. of the external malleolus. This operation is not indicated if the calcaneum is healthy. The after treatment is very easy; drainage is provided for in a dependent position; the wound is plugged with antiseptic gauze to prevent too early healing of its edges. The functional result is good if the periosteum is retained, and walking is not interfered with by the presence of the scar in the sole. Any shortening is easily compensated for by wearing a thick soled boot.

Replacement of Removed Metatarsal.—Dr. K. Cramer[8] reports the following operation which was performed by Bardenheuer in a case where the whole of the third metatarsal bone was removed for tuberculous disease. After the removal of the third metatarsal the second metatarsal is split longitudinally with a chisel into a right and left portion, commencing at its distal end. The division is made with a fine sharp chisel, and care must be taken that too forcible blows are not used, as the bone breaks very easily; this splitting is not continued completely through the bone, but stops short at its proximal end. The outer half of the bone is then drawn outwards, filling up the gap left by the removal of the third metatarsal, and its distal end is fastened to the base of the third toe. A very good result was obtained in the case quoted. The operation is similar to the one practised in congenital defect of one of the bones of the forearm or the leg.

Osteoplastic Resection of the Tarsus.—Negretti[9] describes the following operation where the disease is confined to the posterior part of the foot. He resects the dorsal surfaces of the scaphoid and cuboid and second and third cuneiform bones, portions of the tibia and fibula are resected, and the two raw surfaces are then united together after removal of the os calcis and astragalus.

The foot is shortened by this method, but less mutilation occurs, and the patient can walk on the sole of the foot.

Contraction of the Flexors of the Hand.—Dr. A. Henle,[10] in a case of contraction of the wrist and fingers which had resisted ordinary treatment, removed 1½ c.m. of the radius and ulna. The contraction came on after the use of splints for a fractured forearm. The shortening of the bones permitted the straightening of the wrist and fingers.

The result was good, but the patient being a boy only nine years of age, it remains to be seen whether the rate of growth in the shortened flexors will keep pace with the normal growth in the length of the bones.

Stitch Abscesses.—Dr. Lauenstein[11] has studied the cause of stitch abscesses after operations. He made two hundred and sixteen observations; out of this number bacteria capable of development were found in so-called sterilized catgut thirty-five times. In one hundred and forty-nine samples one hundred and seven were sterilized by dry heat, but twenty-nine were afterwards found to contain bacteria capable of development. The bacillus subtilis was most frequently present, although the micrococcus tetragenus and the staphylococcus albus were also present.

He summarises his results as follows: (1,) Clinical observation shows that there are cases of wound infection which have their origin in the catgut used in the operation; (2,) It cannot definitely be settled

that in any case the catgut was the source of infection; (3,) The so-called sterilized catgut sold in shops contains bacteria capable of development and growth; and (4,) So long as this catgut contains bacteria it cannot be free from the suspicion of being the source of infection.

Kocher, of Berne, since 1888 has used silk only in his gôitrè operations. Before that time he had only 35 per cent. of absolutely primary healings, but since he has used silk he has had 85 per cent. He believes that the suture material should be not only aseptic but also antiseptic. The past winter he has placed his silk in a watery solution of arsenious acid, and, as a result, in thirty-five cases he has had absolute primary union.

In a discussion on the operative treatment of fractured patella, Dr. McBurney [12] entered a protest against the use of silk ligatures buried in the tissues at all, in any part of the body. The silk might be aseptic but it was a foreign body and was non-absorbable, and he had seen quite a number of cases of sinus or pus collection which were due to silk ligatures.

REFERENCES.—[1] "Amer. Med. and Surg. Bull.," Feb. 1, 1896; [2] "Lancet," May 6, 1896; [3] "Rev. de chirurgie," March, 1896; [4] "Annals of Surgery," Feb., 1896; [5] "Beiträge z. Klinische Chirurgie," Bd. xiii., Heft 2, and "Annals of Surgery," Feb., 1896; [6] "Edin. Med. Journ.," July, 1895; [7] "Centralblatt für Chirurgie," 1896, p. 857; [8] Ibid., No. 5, 1896; [9] "Gaz. degli Osped.," No. 8, 1896, quoted in Epit. of "Brit. Med. Journ.," April 4, 1896; [10] "Centralblatt für Chirurgie, 1896, p. 441; [11] Quoted in "Med. Record," Feb. 1, 1896; [12] "Annals of Surgery," July, 1896.

ANÆMIA. *Henry Dwight Chapin, M.D., New York.*

Dr. John Ferguson [1] has got good results with **Protonuclein** when other treatment has failed.

Dr. J. S. Perekham [2] advises the use of **Ferratin**, which is a rusty-coloured fine powder, not unlike oxide of iron. This iron compound is extracted from the pig's liver, and is looked upon as the natural form in which iron is taken with the food. It is easily absorbed, does not cause constipation, headache, or gastric irritation, even after prolonged use. The therapeutic importance of ferratin is based upon the fact that after its absorption it is stored up in the liver, and is immediately available for use; while all other compounds and simple albuminoids, after their slow and difficult absorption, must undergo a change into ferratin before they are active agents for supplying the organism with the amount of natural iron which it requires to maintain all vital functions of nutrition and growth.

REFERENCES.—[1] "Canada Med. Rec.," No. 3 1896; [2] "Chicago Med. Rec.," No. 1, 1896.

ANCHYLOSTOMIASIS. *David Hardie, M.D., Brisbane.*

So far as at present known, the intestinal parasite, *Anchylostoma duodenale*, as a cause of anæmia in Australia, is confined to the eastern seaboard of Queensland and north-eastern part of New South Wales.

It is highly probable that many cases pass through the hands of medical men without being recognized, and that when looked for the disease will be found to have a wider distribution than is at present suspected.

The first case recorded in Australia was by Dr. Hogg, of Goodna, in 1889, the true nature of the case being however not recognized till after death. The next cases we hear of were those of two sisters, who in March, 1892, were admitted to the Hospital for Sick Children, Brisbane, suffering from profound anæmia, under the care of Dr. Lockhart Gibson. Having suspected anchylostoma as the cause of this condition, a microscopic examination of the fæces was made, with the result that numerous specimens of the ova were found. The symptoms as presented by these cases are thus described by Drs. Gibson and Turner, in the "Transactions of the Intercolonial Medical Congress" (1892), and may be looked on as characteristic of the disease. "On admission, both were extremely anæmic, their skin had a greenish yellow tinge, their lips and mucous membranes were blanched; they were well nourished and plump, and showed no œdema, no enlargement of the spleen. Faint hæmic bruits were heard over the præcordia in both cases." Shortly after the occurrence of these cases, Dr. Bacot, of Townsville, published notes of two cases in the "Australian Medical Gazette," November, 1892.

As regards the matter of diagnosis, undoubted evidence is at once obtained by placing some fæces under the microscope, when, if the anæmia be due to the parasite, the ova are found in abundance. Negative evidence is absolutely conclusive that the anæmia is due to some other cause.

Treatment at the Children's Hospital was at first unsatisfactory, santonin, calomel, male fern and thymol were given, with the object of expelling the parent worms, while iron and arsenic were given for the anæmia. For a while the children under treatment improved in appearance, and some worms were expelled, but ova were still largely present in the stools, and when sent home from Hospital they almost invariably returned sooner or later in as bloodless a condition as before.

Some twelve months ago Dr. Turner decided to give **Thymol** in large doses, as recommended by Sonsino, a further trial, and with

such marked success, that it may be looked on as a specific for this disease. In a paper, published in the "Intercolonial Medical Journal of Australasia," Dr. Turner says, "Closely following his method I subjected a boy, aged seven years, who had been unsuccessfully treated two years before to the following routine:—

"For one day he was kept on strict milk diet, and an aperient administered. The next morning he was given four 10-grain doses of thymol at hourly intervals, being allowed only water to drink during the intervals. The milk diet was enforced till the evening, when the bowels were cleared out by a saline aperient. In this way a great many worms were expelled. A week later the same routine was repeated, except that four 15-grain doses were given, and this was repeated on a third occasion. Since then his fæces have been repeatedly examined for ova without any being found. The thymol should be given in powder.

"Alcohol in any form must be prohibited during treatment. The absence of toxic symptoms is probably due to the comparative insolubility of the thymol. It is readily soluble in alcohol; and cases have been recorded of some toxic symptoms, caused by the administration of alcohol while the patient was taking the thymol."

All cases admitted to the Children's Hospital are at once now treated as above described, and with highly gratifying results. The children return home apparently cured. The best proof of this is, that they continue in excellent health, and in no case as yet have ova been rediscovered in the fæces.

ANEURYSM. *Priestley Leech, M.D., F.R.C.S.*

Souchon,[1] from a case of double femoral aneurysm on which he operated, draws the following conclusions:—

(1,) In cases of large aneurysms that are liable to increase rapidly, the compress should not be tried, as a rapid increase in the tumour will make it necessary to operate through bruised tissue.

(2,) The ligature should be applied as close to the sac as the condition of the artery will allow.

(3,) Should this fail, extirpation of the sac is the next thing in order, with or without the use of the Esmarch bandage and band. In case of high femoral aneurysms a provisional loop ligature after the manner of Rivington and Treves should be applied to the artery above.

Aneurysm in Children.—Aneurysm is generally considered to be a disease of adults, but Kirmisson[2] operated on a case of popliteal aneurysm in a boy seven and a half years old; the femoral was tied with success in Hunter's canal.

The aneurysm appeared suddenly six weeks before the operation ; the heart was normal and there was no history of traumatism.

Bouilly had seen a popliteal aneurysm in a child eight or nine years old, and Reclus one of the brachial artery in an epileptic child nine years of age ; both these were probably due to injury.

REFERENCES.—[1]"New York Med. Journ.," Nov. 2, 1895.; [2]"Bull et. Mem. de la Société de Chir.," Paris, xxi., p 129, 1895.

ANTHRAX.

Synopsis.—(Vol. 1896, p. 165.) Subcutaneous injections round the pustule of 2 or 3% **Carbolic Acid**—3 Pravaz syringefuls three times daily.

ANTRUM (Empyema of). *Henry Sewill, M.R.C.S., L.D.S., Eng.*
Walter J. England, L.D.S., Eng.

Judging from our experience, the subject of empyema of the antrum is of greater importance, if not of greater interest, to the medical than the dental practitioner, for though we have tapped the cavity in a number of cases, now very large, in comparatively few instances has a patient applied directly to us as dental surgeons. In those which have applied to us directly the patients have usually complained only of trouble connected with the teeth.

In one case following an attack of influenza, the patient, after severe toothache in a bicuspid, gave a history of periodontitis, followed by suppuration and abscess, which had burst and discharged through the nose. On removal of the tooth, the antrum was found to contain pus. In another, in which there was not free escape for the pus through the ostium, distention of the cavity had caused absorption of its outer wall, and the patient sought our advice with regard to a soft fluctuating swelling over the first upper molar. The great majority of cases have, however, been brought to us by medical practitioners, by whom a diagnosis had been made ; but in many of them the patients had suffered for months, some for years—often undergoing treatment wrongly directed—before the real nature of the malady had been made out.

Until comparatively late years, when the subject has been fully dealt with by Zuckerkandl, Ziem, Krause, Semon, and other writers, our knowledge of antral empyema has remained far from complete, and the existence of the disease does not appear even now to be fully recognized either among dental or medical practitioners. It is only within the last ten years that we have met with cases. The affection does not seem to have been clearly described by many older writers, although Allouel and Jourdain, in the last century, recognized the disease, and even effected cures by syringing through the ostium maxillare. Text books have, until recently, given no clear or adequate

description of the disease. As the etiological factors which give origin to it surely existed formerly as they do now, we can only conclude that until the present day the true character of the disease has been overlooked.

The facts that dental disease is by far the most common cause of this affection, and that the services of the dental surgeon are almost indispensable in its treatment, render the subject of importance to every dental surgeon.

First as to *etiology*. The roots of several teeth, notably the second bicuspid and first and second molars, are separated from the cavity of the antrum by merely a thin layer of bone. Sometimes roots pass within, and are covered by a thin osseous film beneath the mucous membrane. From this anatomical condition it is easy to perceive that there must exist a danger of extension of inflammation from around teeth, or of septic matter or pus, the products of dental disease, flowing in; and that this does occur in a certain proportion of cases, and that the result is to establish an empyema, seems beyond doubt. It is worth while noticing in passing that antral empyema seems, in most instances, due to chronic disease—at least, we have encountered comparatively few cases in which evidence of, or history of acute inflammation of the cavity was to be discovered. The vast majority of cases of empyema of the antrum are chronic from their commencement. There is very often a history of acute dental troubles—inflammation of pulp or periosteum, or both—but although some cases have followed at once upon an acute dental attack, it has generally been clear that the acute symptoms had subsided before, often long before, symptoms of pus in the antrum became fully developed.

With rare exceptions, in the cases we have seen, either the history of dental disease was clear, or a diseased tooth was present, which demonstrably constituted the exciting cause. We have never yet seen a case where all the teeth in the affected side were perfect, and where there was no history of dental trouble in that portion of the maxilla. We have seen one case in which, although dental disease (a carious bicuspid with exposed pulp) was present, it was certain that simple inflammation only, not running on to suppuration, had occurred within and without the tooth. We do not believe that any dental disease not giving rise to direct septic or purulent infection can originate antral empyema. There is no difficulty in understanding how inflammation beginning in another accessory cavity of the nose may spread to the antrum, and, localizing itself there, may lead to empyema, and this possible cause is not overlooked by authorities, indeed, a small proportion of cases is ascribed to it. But in the case in question a

most careful differential diagnosis by Dr. Felix Semon had eliminated every possible cause but the tooth, and thus the etiology of this case remained in doubt.

The *pathology* of empyema seems simple. Pus once present, and secreted in the antrum, the cavity can never be perfectly emptied except by art. Pus flows out when it reaches the level of the ostium—the natural opening into the nose—or when the head is inclined forwards, but owing to the height of the opening, and its direction, a residuum always remains on the floor, and this becoming putrid, and often inspissated, irritation is increased, until at length the whole lining of the cavity becomes involved, and a condition is established to which the term empyema may fitly be applied. It is worth while mentioning here that the ostium maxillare may vary within considerable limits in point of size. It may be almost impervious, or it may be sufficiently large—as in one of our cases—to allow of the passage of a piece of gum elastic catheter, size No. 8. Smaller accessory cavities may exist in the antrum when bony septa divide the cavity into several divisions.

The *symptoms* consist of discharge of pus, mostly fœtid, from the nostril of the affected side, and pain. Be it noted, the discharge, besides being unilateral, is not continuous, but occurs at irregular intervals, *i.e.*, when the antrum is full, and particularly when the head is inclined forwards. In recumbency discharge may flow down the posterior nares. The patient is conscious of a noisome odour—the pus is often remarkably offensive—but the odour is not usually perceptible to others, except at the moment when pus may be flowing from the nose.

The pain may be quite local, and then it is dull and aching in character, or it may, and often does, take the form of severe frontal headache and neuralgia. It appears not an uncommon belief that distension of the antrum and bulging of the walls form usual symptoms of empyema, but this is a mistake; these symptoms occur only in those rare cases in which the ostium is quite occluded. We have only seen a few such instances. In one, the patient had suffered most from pressure beneath the orbit, and ophthalmic troubles in consequence. In another a prominent symptom was bulging of the external wall of the antrum simulating a growth springing from within. The amount of mental depression and injury to the general health are often much greater than would seem possible in these cases. The quantity of fœtid pus, which must at night drain into the stomach, must not be overlooked in considering effects upon the general health. In several instances we have noticed that blotches and eruptions on the face and

round the mouth have rapidly disappeared on free drainage of the antrum being established.

The *diagnosis* of empyema of the antrum is not generally difficult. A patient presenting the principal symptoms just mentioned will, in all probability, prove to be a sufferer from this affection; but it is not always safe to pronounce a positive diagnosis without thorough rhinoscopic examination. Mistakes have been made and recorded by very competent observers, and the antrum has been opened in several cases in which no antral trouble had been really present. The relative transparency of the cheeks on transillumination by means of a small electric lamp within the mouth is not always a reliable sign. Presence of pus is not invariably denoted by the opacity of one side. But the amount of light transmitted through the infra-orbital plate seems to afford a more certain sign.

Disease of the frontal sinuses, or of the ethmoidal cells, and presence of nasal polypi or adenoid growths, may give rise to symptoms closely simulating antral empyema.

The *treatment* consists in removing irritating causes, whether in the teeth or elsewhere, in providing free drainage, and in thorough daily irrigation of the cavity with antiseptic lotions. We are strongly of opinion that any tooth in a condition in which it may be only open to suspicion as the cause of empyema ought to be extracted. This opinion was formed by the experience of the first case which we assisted to treat, and the opinion has been strengthened by what we have learnt subsequently. In this first case disease of the antrum had been suspected, and frequent enquiry made into the condition of the teeth by surgical practitioners who had been consulted. They had, however, remained satisfied on the patient's assurance that his teeth were in good order, and had been pronounced free from disease by a leading dentist. At length a positive diagnosis of empyema was made by Dr. Semon, and he brought the patient to us to tap the antrum. The first molar of the affected side contained a large amalgam filling, evidently extending into the pulp cavity, and the pulp was dead. The tooth was free from pain; not notably sensitive to percussion, and displayed no well-marked sign or symptom of internal or external inflammation. We had decided from the first that under any circumstances, even had we been obliged to sacrifice a sound tooth, we should tap the antrum through a tooth socket, and we therefore extracted this molar. On opening the tooth it was found that the pulp had been removed, and the tooth filled *secundum artem*, but the palatine root was extensively necrosed from the apex downwards, and its alveolus communicated with the antrum by an opening large enough to admit

an ordinary dressing-case silver probe. Suppuration round this root had found free vent into the antrum, and hence tension within the socket, and symptoms referred to the tooth were absent. So much pain in this case had been suffered in the form of neuralgia and headache, that it would have been with difficulty localized by the patient, and ophthalmic symptoms from pressure beneath the floor of the orbit had existed, which further confused diagnosis. We have just remarked that we had formed the determination to puncture through the alveolus, and we are convinced that this is the best practice in every case. The only other opening worth considering is through the canine fossa, and that only when it is deemed advisable to scrape the antral membrane. The objection to this opening is that it takes a long time to close, and sometimes never does so. Almost all surgeons in England, at least, are performing the operation of opening through the alveolus, but elsewhere opening through the nose, as advised by Krause, is in many cases preferred. The various points through which openings can be made are: (1,) Inferior or middle meatus of the nose; (2,) Canine fossa; (3,) Zygomatic fossa; (4,) Alveolus (*Fig.* 1).

Fig. 1.—Cast of mouth, showing opening into antrum.

What is principally called for is free, constant drainage. This effected, the longest step towards a cure is achieved, and immediate relief to all urgent symptoms is in most cases afforded. Tapping may be performed through the alveolus of the first or second bicuspid, or first or second molar; when the latter, a buccal socket should be chosen, so as to avoid missing by accident the antrum and perforating the floor of the nose, and so as to leave the opening in the bone as vertical as possible. The opening should always be made at right angles to the plane of the alveolar border, else when making the drainage apparatus, presently to be described, it is almost impossible to secure the tube accurately in relation to the plate when removing it from the mouth before finally soldering these two parts together.

Fig. 2.

For making the opening we employ the dental engine, with a spear-

headed drill, shown half actual size in *Fig.* 2, of about one eighth of an inch in diameter, and of sufficient length to penetrate the antrum, but not long enough to endanger the floor of the orbit. The nozzle of the hand-piece of the engine also acts as a stop in case of a sudden plunge on the part of the patient. The opening is then enlarged by a

Fig. 3.

trocar (*Fig.* 3, half-size), to allow the passage of a tube of at least one eighth of an inch in diameter, and the trocar is held so that the thumb acts as a stop to prevent it by accident penetrating too far. Cases are on record where the outer, inner, and posterior walls have been injured or penetrated by the trocar.

The dental engine is not absolutely necessary in the operation; those who prefer it may find small trocars sufficient for all purposes. It is useful to bear in mind the accidents which may occur during the performance of the operation of tapping the antrum. They are as follows: Failure to reach the antrum, the cavity varying at times slightly in position and size; and it being often difficult exactly to estimate the depth of the alveolus through which the perforation is made without careful probing and measurement. As before mentioned, the orbital plate may be wounded; any of the walls of the antrum may be wounded. Zeim records a case of retro-maxillary abscess and secondary abscess formation in the cheek following penetration of the posterior wall of the sinus. A branch of the infra-orbital artery has before now been wounded, and the writer quoted above records a case where ligation of the infra-orbital artery became necessary from a similar cause. The possibility of wounding the floor of the orbit must *always* be borne in mind, but this accident seems barely possible with exercise of proper care.

Fig. 4.—Gold plate with tube; and split-pin for closing tube.

Large experience has proved in our hands that the best apparatus for keeping the opening patent, preventing growth of granulations, and facilitating drainage and syringing, consists of a plate such as is usually made to carry an artificial tooth, but fitted with a gold tube to pass within the antrum (*Fig.* 4). The plate being made and found perfect, a hole is cut corresponding to the opening into the antrum;

and the tube fixed in position with modelling composition is tried in, so as to secure accuracy of adaptation. The main point is to ensure easy passage of the tube, and to guard against irritation from pressure upon the bony passages or walls. During trials it is necessary to secure the tube by means of a ligature passed through a hole drilled in its lower extremity, lest the tube slip and pass within the antrum. The tube having been carefully withdrawn in position is soldered to the plate in the usual way. If the patient be wearing artificial teeth, the tube may sometimes be adapted to the denture. The tube has a rounded open end above, and opens below by a funnel-shaped orifice, which may be kept when necessary, as during meals, plugged with a gold split pin. It is well for the first few days not to close the tube at all. The total length of the tube is usually three quarters of an inch or more. The depth of alveoli varies greatly, and it is necessary for the tube to project well into the antrum, as otherwise the mucous membrane may close over the opening if the end of the tube is only just level with the antral floor, and block the opening, and thus the patient will be unable to syringe properly. The plate should be removed frequently for cleansing. It will be found that pus escapes freely by the sides of the tube when plugged, and it is not necessary to perforate it with holes (*Fig.* 5).

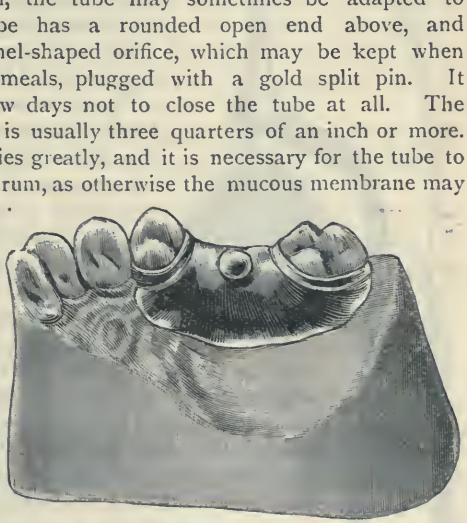


Fig. 5.—Cast of mouth, showing *in situ* plate with tube closed by split-pin.

Drainage being thus provided for, the antrum, after being freed by syringing from inspissated pus, must be thoroughly irrigated twice a day with an antiseptic lotion, such as **Perchloride of Mercury**, 1 in 2000, or 5 to 15 grains of **Chloride of Zinc** to the ounce of water, and one teaspoonful of this solution to be added to half a pint of luke-warm water. In chronic cases considerable benefit often results from occasional changing of the antiseptic.

The syringing apparatus devised by Mr. Christopher Heath (*Fig.* 6), with the addition of a bayonet joint to fix the cannula to the nozzle, answers best. It is provided with a long thin nozzle to pass well up the tube, and worked by an elastic ball action. It is capable of

throwing a continuous stream of just the right strength through the cavity. Half a pint of lotion may be used at each sitting. The lotion should make its exit through the nose, the patient's head being inclined forward. The tube may be withdrawn during syringing, if the patient finds it more convenient. This treatment is continued until a cure is accomplished, when the tube is discarded, and the opening allowed to close.

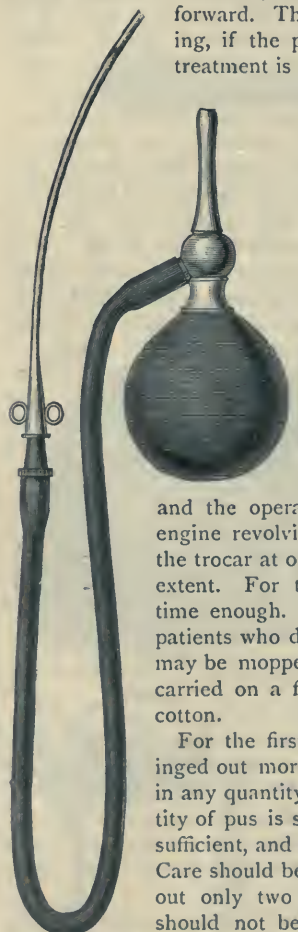


Fig. 6.—Apparatus for syringing the antrum.

In cases where the opening is large, it is sometimes well to cut off the tube, solder up the orifice, and let the plate be worn until the opening has healed.

We prefer nitrous oxide as an anæsthetic in these cases, and when a tooth has to be drawn, divide the operation into two parts; but usually performing the whole at one sitting. First the tooth is removed, and the patient having recovered, an examination is made, and it is decided through which socket the antral opening may best be made. The patient is now again narcotized, and the operator, standing ready, drill in hand, and engine revolving, perforates the cavity, and then with the trocar at once enlarges the opening to the desired extent. For this procedure "gas" narcosis affords time enough. During subsequent manipulations in patients who do not bear slight pain well, the passage may be mopped with a saturated solution of cocaine carried on a fine wire probe bound with absorbent cotton.

For the first week or so the cavity should be syringed out morning and evening as long as pus exists in any quantity. Afterwards, when only a small quantity of pus is secreted, washing out once a day will be sufficient, and as pus decreases, every other day only. Care should be taken when no pus appears to syringe out only two or three times weekly. The opening should not be allowed to close until at least six or eight weeks after the last appearance of pus.

In all cases it is absolutely necessary that the injections shall pass from the alveolar opening through the ostium and flow

out from the nose. In cases where it does not, either the adjustment of the tube may be at fault, or the opening may be blocked with inspissated pus. In the latter case, blowing the nose violently, and carefully syringing, will usually clear the way. The ostium may be blocked with hypertrophied membrane, in which case it must be removed by the surgeon.

Cases of empyema are often extremely chronic, and they usually resist treatment for periods proportionate to the time the disease has lasted. Recurrence after apparent cure is not common, but we have seen cases, especially after influenza, which tend to show that relapse may occur. We have also seen cases in which both antra have contained pus, but they call for no special remark, either as regards etiology or treatment.

Whilst care must be taken to ensure thorough drainage, the danger of keeping up irritation by too much syringing, and the use of unsuitable lotions, must not be overlooked.

It is, perhaps, desirable to add, finally, that we consider the treatment of empyema of the antrum, as a whole, does not fall within the province of a dental surgeon. We have always restricted ourselves to the operation of tapping the cavity, and construction of the drainage apparatus, leaving all other matters to be dealt with by the surgeon originally in charge of the case.

APPENDIX VERMIFORMIS. *A. W. Mayo Robson, F.R.C.S.*

Cancer of the Appendix is stated to be extremely rare. Last year I reported a case on which I had operated, and Dr. L. A. Stimson, at a meeting of the New York Medical Society, also gave an instance in a woman of forty-five years, who had ten years previously suffered from appendicitis.

Peculiar forms of Appendix. — Dr. Stimson also presented some peculiar forms of appendix. At an early stage of development in the fœtus, there is a cæcum, but no appendix. This cæcum by arrest of development becomes the appendix, while a new cæcum is formed by pouching of the colon at the root of the appendix. In the two specimens shown the appendix springs from the lower end of the cæcum, constituting persistence of the early fœtal form. Both were large and fully 6 inches long, and in one the cæcum narrowed uniformly into a funnel to terminate in a dilated appendix. In the other, the cæcum had its usual cylindrical form. Twice within a fortnight he had encountered the appendix of the latter form during operations for pelvic disease in women, the appendix springing from the extreme lower end of the cæcum, but not of so large size as the specimens

presented, which had been taken from the cadaver. The cases contradict the statement in books on anatomy, that the cæcum was always an entirely extra-peritoneal organ.

Appendicitis.—In a paper read before the Medical Society, London (Dec. 14, 1895), I related a series of cases which I had operated on during the past year, and among them were six cases associated with general suppurative peritonitis, out of which five had recovered after removal of the perforated or gangrenous appendix, with subsequent free lavage and drainage.

My views on the subject are as follows: The various pathological classifications of appendicitis are of greater scientific than of clinical importance, when the question of operation has to be considered, and I think it will be found that the division of cases into (1,) Acute; and (2,) Sub-acute, will serve a more useful purpose than speaking of catarrhal ulcerative, and infective, or of endo-, parietal-, peri- and para-appendicitis (Fowler). The most important points to settle in any given case of appendicitis are: First, Ought an operation to be done? Secondly, If so, when?

It may sound somewhat radical, but I speak from conviction, after considerable experience, when I say that I believe the early operation undertaken as soon as appendicitis is diagnosed—first advocated by Dr. McBurney—would lead to a far greater percentage of recoveries than the method of individualising, which we in England still adopt, and which we seem likely to continue. I believe this because I know that the removal of an appendix before suppuration, perforation, or gangrene has occurred, or before firm adhesions have formed, is practically unattended by risk, and the operation can be accomplished through a small incision, with separation, rather than division of muscular fibres; whereas in waiting for resolution, we not infrequently land ourselves in serious difficulties, and have to operate under unfavourable circumstances.

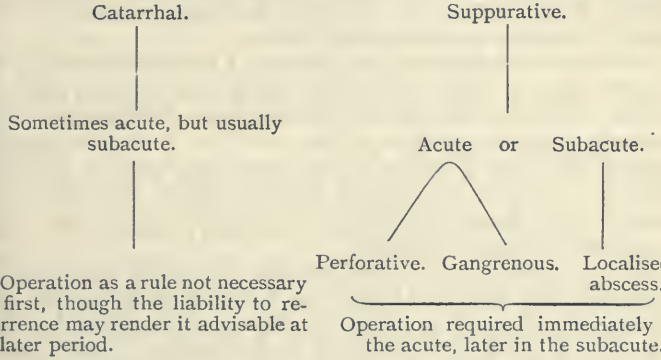
Whilst it is convenient to make the clinical division before operation, it is quite easy to divide the cases subsequently into: (*a*,) Catarrhal; (*b*,) Suppurative, either without perforation, or with perforation, or associated with gangrene.

Catarrhal Appendicitis furnishes the greater number of cases of recurrent appendicitis, and this is the variety which may, and usually does recover without operation, though a second attack may assume the suppurative type requiring operation.

Suppurative Appendicitis may run an acute or sub-acute course, but whatever form it assumes, whether with or without perforation, or with or without gangrene, it demands operation, which in my opinion

should be advised at the earliest moment, *i.e.*, as soon as a probable diagnosis is arrived at. I have never regretted operating, but I know of several calamitous cases, where delay at the request of the patient or friends has led to a fatal termination, what might have been avoided by operation.

The simple classification into catarrhal and suppurative, which is closely related to the clinical division of acute and sub-acute, is the first step to enable us to arrive at a decision with regard to operation. It is simply shown in the appended chart :—


Catarrhal.
Suppurative.
Sometimes acute, but usually subacute.
Acute or Subacute.
Perforative. Gangrenous. Localised abscess.
Operation as a rule not necessary at first, though the liability to recurrence may render it advisable at a later period.
Operation required immediately in the acute, later in the subacute.

I always look on an acute onset with a rapid pulse and tenderness over the appendix, without the presence of a tumour, as indicating the need for immediate operation. A more gradual onset with a quiet pulse (not over 100), and the early formation of a tumour, are signs that delay may be safe.

If in the course of appendicitis, at any stage, a rigor with quickened pulse and increased temperature occurs, operation should be advised, as this indicates septic absorption. Temperature alone is of little assistance, the pulse being the true guide to treatment. Opium may so disguise the pulse-rate, thus leading to serious, or even fatal delay, that I feel sure we best consider the welfare of the patient by trying to give relief in other ways until the condition to be dealt with has manifested itself. If opium has been given, it will be advisable for the surgeon to reserve his opinion, and if on withdrawing the sedative for a few hours, the pulse has increased in frequency, and anxiety of countenance has declared itself, operation will be required. Relief or cessation of pain with a marked rise in pulse-rate is an indication for immediate operation, as it not infrequently indicates gangrene of the appendix. Distension of the abdomen with vomiting and rapid pulse,

are signs that admit of no delay, as they are indicative of extending or of general peritonitis.

As to the time when operation should be done in the subacute or catarrhal form, the quiescent period is undoubtedly the safest, as advocated by Treves. Any time after the acute symptoms have subsided may be selected; probably from two to four weeks after an attack will be found the best. Dr. Willie Meyer[2] remarks that "An appendix once inflamed has to be looked upon as a diseased organ, which is very apt to give repeated, more serious, and even fatal troubles in the future." He therefore advocates the removal of the appendix in every case after a first attack.

In England our practice is less radical. I suppose we can all point to cases where a patient has had an attack of catarrhal appendicitis ending in complete recovery without recurrence: therefore those who advocate delay have reason on their side; but I do most strongly uphold, that after a second attack, operation should be decidedly urged, as repeated seizures will certainly occur, and from being catarrhal may become suppurative. In operating, ought we always to remove the diseased appendix?

My own feeling is that with very few exceptions the operation should be made complete by removing the origin of the trouble. No question can be raised as to the wisdom of removing it in the recurrent form, as that is the *raison d'être* of the operation. Nor can there be much doubt that where there is general peritonitis, the perforated or gangrenous appendix should be taken away. The only question arises in cases where suppuration is apparently localised, and where there is a fear of opening the general peritoneal cavity in searching for the offending member. My method of procedure in such cases is to very thoroughly evacuate and cleanse the abscess cavity as soon as pus is reached, and then to carefully follow the longitudinal band on the cæcum, which inevitably leads to the appendix. This can usually be removed without greatly disturbing adhesions; but even if adhesions be broken down, and the general peritoneal cavity be exposed, no harm will as a rule follow if the parts be isolated by sponges. Besides the manifest advantage of removing the danger of subsequent attacks, the removal of the appendix takes away the danger of fæcal fistula; and not infrequently the judicious search for the damaged organ leads to the discovery of other collections of pus, to leave which would be highly dangerous and very unsatisfactory. In operating where there is a general peritonitis, we must be prepared to lose many patients, even if the operation be undertaken in a fairly early stage; but in the later stages, when distension is well marked and

the pulse is becoming very rapid, the percentage saved will be very small. In such cases I believe in very free irrigation with plain boiled water or weak boracic lotion, and free drainage by several large rubber tubes.

Mr. Moynihan[2] reported an extremely interesting case of general peritonitis dependent on appendicitis, in which he had treated the case successfully by removing the appendix and by drainage after lavage.

A very practical paper is given on the subject by Dr. Willie Meyer,[3] which is well worthy of careful study, as are also Mr. Treves' remarks on the subject in his review of Peritoneal Surgery in the "British Medical Journal" for Oct. 31, 1896.

REFERENCES.—[1] "Med. Record," Feb. 29, 1896; [2] "Leeds and W.R. Med. Chir. Soc."; [3] "Med. Record," Feb. 29, 1896.

ASCITES. *A. W. Mayo Robson, F.R.C.S.*

Drs. Rutherford, Morison and Drummond[1] describe a case of ascites due to cirrhosis of the liver, which was cured by the following operation: The abdomen was opened below the umbilicus and emptied of fluid. The liver was inspected and found to be typically cirrhotic. The abdomen was dried out with sponges, and the parietal peritoneum scrubbed with a sponge. The peritoneal covering of the liver and the spleen and the portions of parietal peritoneum opposed to them were specially scrubbed. The omentum was sutured across the anterior abdominal wall, a glass tube was left in the pouch of Douglas, and the parietal wound was closed by silk sutures. For the purpose of retaining the parietal in contact with the visceral peritoneum, long broad adhesive straps were firmly applied circularly from the epigastrium down to the tube in the hypogastrium.

The after progress is interesting. For the first ten days a nurse by frequently pumping the tube kept the abdomen empty and the dressing dry. Three weeks after the operation there was no fluid escaping, and the tube was removed. A few days later the wound had entirely healed, and the patient went home. She soon regained health, and has led an active busy life, and has got stout since the operation. She attended the Medical Section of the British Medical Association meeting at Carlisle eight months after the operation. Was then apparently in perfect health. The abdominal cicatrix had yielded to some extent, producing a ventral hernia. This was the result of a cough, which troubled her for some months, and imperfect suturing, but it occasioned no inconvenience, and was kept in place by an abdominal belt.

REFERENCE.—[1] "Brit. Med. Journ.," Sept. 19, 1896.

ASEPTIC SURGERY. *Priestley Leech, M.D., F.R.C.S.*

C. B. Lockwood[1] describes the methods he uses for the attainment of asepticism in his surgical work. He takes the word aseptic to mean the absolute exclusion of bacteria from wounds, or in other words sterility. The word "aseptic" should not be used exclusively for any method of attaining asepsis.

From his experiments with so called antiseptics, Lockwood has become sceptical whether it is possible with chemicals to disinfect a sinus or ulcer. He has learnt to rely upon moist heat for the sterilisation of instruments and materials, and upon dilute chemicals for keeping them sterile. Chemicals, however, must be used for the disinfection of the skin, of sponges and of septic wounds, sinuses or ulcers. For sterilising instruments with boiling water a cheap and simple apparatus is all that is necessary. A large enamelled saucepan can be bought for a few shillings, and is quite efficient. The instruments are boiled for fifteen minutes in water to which has been added a teaspoonful of washing soda to the pint. The instruments are taken direct from the boiling water and put into a dish of 1 in 60 carbolic lotion. This dish, as well as all the utensils used at an operation, ought to be sterilised the same as the instruments. Simply washing a dish out with perchloride or carbolic solution will not sterilise it; boiling, upon the other hand, is certain.

After the instruments have been put in lotion no one, except the operator, is allowed to touch them. The hands are so hard to sterilise and keep sterile that the fewer who touch the instruments or materials the less the chance of infection.

Lately a fair degree of certainty has been reached in disinfection of the hands by the following method: The nails are cut quite close, the hands are scrubbed and washed for three minutes with a sterilised scrubbing brush in soap and hot water; they are then soaked for two minutes in a 1 in 500 solution of biniodide of mercury in spirit —ordinary methylated spirit will do. Biniodide of mercury has twice the germicidal power of sublimate, and it does not combine with albumen; thus a mixture of biniodide lotion and blood remains clear and translucent without any precipitate, and a wound washed with it undergoes no alteration, but looks as if it had been washed with water. The addition of the spirit makes it spread over the surface of the skin and penetrate its depths. To test the success of our attempts at sterilising the skin, a small scrap is cut off during the operation and dropped into a culture medium. The use of these tests has led to a marked improvement and increased care in sterilising the hands. Lockwood used to use towels supposed to have been

sterilised by having been soaked for many hours in sublimate or carbolic solution ; bacteria usually grew when bits of these towels were cut off and put into culture media. The towels were then steamed and boiled, and since then there has hardly been a failure.

One of the hardest problems to solve is disinfection of the patient's skin. The skin of the limbs is much easier to disinfect than that of the scalp or scrotum, and the skin of cleanly patients than that which is harsh and neglected. Bacteria dwell in its folds and crevices, in the mouths of the sweat glands, of the hair follicles, and in the sebaceous glands. The grease of the skin protects the bacteria from the action of chemicals, and is the great obstacle to disinfection. The following method is used : Shave and scrub thoroughly with soap and hot water; rub with ether or turpentine to extract the grease, and then wash with 1 in 500 biniodide of mercury in spirit; if this were left on it might cause blistering, so it is washed away with biniodide lotion and the following dressing applied : 5 per cent. carbolic gauze wetted with a solution of biniodide of mercury in glycerine and water (1 in 2000). The glycerine keeps the dressing moist, and helps the chemical to penetrate the skin. The sterility of the skin is tested by dropping a scrap into a broth culture tube. The result mainly depends upon the experience of the operator. New house surgeons usually fail. As regards sponges, the sulphurous acid method properly applied affords a very high degree of certainty of sterility. It is carried out thus : After the sand has been got rid of by beating, and the shell and coral removed with solution of hydrochloric acid (℥j to Oj), the albumen is removed with a hot solution of washing soda in water. Sponges which have been used, and are full of blood, fat, and albumen, may require several repetitions of this process. After the soda solution has been removed with hot sterilised water, the sponges are bleached and sterilised by placing them in cold solution of sulphurous acid (1 in 5,) for twelve hours. This is washed out with sterilised water, and the sponges put into 1 in 20 carbolic lotion ready for use. No one is allowed to touch the sponges except the assistant. They are handed to him in a bowl of lotion, and he himself squeezes them out, applies them to the wound, and puts them back in the lotion. Very few sponges are required ; six suffice for the largest operation. With sublimate or carbolic lotion, the assistant could hardly keep the sponges clean, but with binicdide this difficulty is overcome. The nurse has simply to hand a fresh basin of lotion to the assistant. The management of sponges is usually one of the weak points of an operation, and nurses cannot always be trusted to keep their hands aseptic.

As regards sutures and ligatures, silk is almost sterile as it leaves the makers, and is uninjured by one or two boilings. The surgeon cuts his own ligatures and threads his own needles. In a great many tests, septic silk or fishing gut has never been met with. Catgut is useful for some purposes, but that usually supplied is quite untrustworthy. To disinfect, get rid of oil with ether or turpentine, or energetic scrubbing with soap and hot water ; the gut is then soaked for twelve hours in 1 in 1000 sublimate, and then in 1 in 200 solution of sublimate in alcohol for the same period. Catgut is by no means an essential, and its sterility ought always to be suspected.

The towels which are used to surround the field of operation cannot be sterilised by chemicals, but steaming or boiling for half an hour affords absolute security, and ought not to be omitted. Before the operation, the whole area of skin within the field of operation receives a final swabbing with biniodide of mercury in spirit (1 in 500). The presence of a septic ulcer or sinus in the field of operation is a most serious complication. An approach to asepsis may be obtained by energetic washing and scrubbing, washing with 1 in 1000 biniodide of mercury lotion, and by thoroughly swabbing with pure carbolic acid. The actual cautery may be used, or a good scraping with a sharp spoon followed by a swabbing with pure carbolic acid. The ulcer may be sealed by gauze soaked in iodoform collodion. The anæsthetist and his apparatus are a great difficulty in operations about the head and neck ; the best safeguard is to have an anæsthetist who understands the principles of aseptic surgery. (Ether given by the rectum is useful in some cases.) Atmospheric bacteria can however be avoided in a great degree by operating in rooms in which the dust is reduced to a minimum, by keeping the wound or viscera covered up, and by occasional irrigations during the course of the operation ; and for this purpose, biniodide of mercury solutions, 1 in 2000, have incontestable advantages.

Evenly opposed skin unites in a few hours, and effectually guards the unhealed depths of the wound against the dangers of infection from the outside. Drainage is necessary in some wounds, *e.g.*, in scrotal wounds, and in wounds where the cancellous ends of bones have been cut, as in Symes's amputation. Small tubes soon become blocked with blood clot, and it is better to put in a large tube.

The outside dressings are not always put on with sufficient care.

Lockwood puts in a strong plea for the frequent testing of the various steps of an aseptic operation, and points out that the necessary apparatus is not dear. This is quite true, but the two great difficulties in the way of applying these principles in any hospital,

except those which are connected with a medical school, are the want of special training, and the still greater one of want of time.

REFERENCE.—[1] "Quart. Med. Journ.," Jan. 1896.

ASTHMA. *R. Shingleton Smith, M.D, B.Sc., F.R.C.P.*

Dr. Goodhart [1] observes that the rational treatment of asthma should begin, if possible, with the child. The first thing, and a difficult one, is to find and secure a favourable climate—in any event to oppose the system of coddling and in-door cultivation. A bracing open-air life, reasonable care in diet, and healthy recreation, give the best results. Amongst drugs **Arsenic** was extolled. The treatment of the paroxysm must be guided first by the cause which seemed to induce it; thus, if it followed a meal, an emetic might serve. **Iodide of Potassium,** combined with **Ethereal Tincture of Lobelia**, seemed to be useful when an attack was impending; when actually in progress a subcutaneous injection of **Morphia** might be given, or the patient made to inhale **Chloroform**.

The association of asthma with nasal disease has been emphasised by Dr. Greville MacDonald.[2] Of thirty cases of nose disease associated with asthma he had had twenty manifestly relieved by local treatment, while of these twelve might be quoted as tantamount to complete cures. Of the twenty, four were cases of obstruction due to septal deformities, six were of vascular engorgement or hypertrophy of the inferior turbinated bodies, four were of polypus, and four of adenoids, while the remaining two were instances of that curious œdematous swelling over the upper and anterior portion of the triangular cartilage so often associated with paroxysmal sneezing. The remaining ten cases unrelieved were all due to polypus. He believed that the latter condition was more often associated with chronic bronchitis than with simple spasmodic asthma, and must be considered as a concomitant of rather than as responsible for the bronchial symptoms. From these cases he purposely excluded hay asthma, for he regretted to have to confess that he had but seldom found this symptom relieved by intra-nasal operation, although, so far as the more severe symptom—the sneezing—was concerned, he was greatly encouraged by the results of treatment. Dr. MacDonald then gave particulars of three cases of complete relief of severe spasmodic asthma which had been treated by himself, the results of operation being so immediate and so emphatic that there could be no doubt that the *post hoc* was *propter hoc.*

Dr. E. M. Skerritt [3] still finds **Caffeine** of value in respiratory conditions, especially when the element of spasm is prominent.

But it is not only in asthma that the writer above mentioned has observed good effects from the administration of caffeine, for they are exerted, he says, in any morbid condition in which muscular contraction of the bronchial tubes is a factor, and they are proportionate to the amount of such spasm which is present in any given case. Thus, in acute bronchitis, when the existence of dry râles points to a narrowing of the tubes from contraction of the muscular fibres in their walls, as well as to inflammatory swelling of the lining membrane, caffeine will tend to cause relaxation of the spasm, and consequently relieve dyspnœa in so far as it is due to this element. There is often an element of true spasm in chronic bronchitis and emphysema; and upon this, Dr. Skerritt says, caffeine will be found to exercise a beneficial influence, allowing greater freedom in the passage of air.

Caffeine has occasionally been found of service in acute respiratory affections where heart failure threatens, as in pneumonia and capillary bronchitis; and it has been especially praised by various observers in the treatment of the former disease. It is also well spoken of in atelectatic and hypostatic conditions of lung. "It is obvious that its action as a heart tonic, as well as a relaxer of bronchial spasm makes it doubly useful in many morbid conditions of the respiratory organs; and it undoubtedly gains additional value by its influence as a general stimulant to nerve centres—in cerebrum, in cord, and in medulla.

Dr. Sangree[4] has succeeded in cutting short a spasm in a severe attack of bronchial asthma by applying **Ice** over the course of the pneumogastric nerve at the root of the neck.

Dr. Hearder,[5] Wakefield, has obtained good results from **Paraldehyde**, as an anti-spasmodic in asthma. He exhibited the drug, with good effect, in about thirty cases of asthma, including ordinary spasmodic asthma, asthma with epilepsy, with morbus cordis, with renal disease, with chronic bronchitis, and in two cases of asthma with pneumonia. "In the majority of the cases relief was rapid and complete, and in the remainder the distress was lessened. The dose employed was 45 to 60 minims, one dose being usually sufficient, a few cases needing a further dose of 30 to 45 minims an hour or so later. The hypnotic action of the drug, also, is of great service, as in so many cases of asthma the attack comes on in the evening or during the night. No untoward action of the drug was observed, but, on the contrary, the breathing gradually became easy and normal, the pulse steadied and strengthened, and the patient fell into comfortable sleep.

A disagreeable feature of the drug is that it scents the breath strongly for about twenty-four hours. A point in dispensing is that

the addition of a few drops of alcohol renders paraldehyde perfectly miscible with water; any flavouring tincture can be used.

The following combinations have been found useful in cases of asthma[6]:—

℞	Syrup. Ipecac.	ʒiv	Tinct. Belladonnæ	ʒij
	Spirit. Ether. Co.	ʒiv	Aq Laurocerasi	ʒij
	Sodii Bromid.	ʒiv	Aq. ad	ʒiv

Sig. Two teaspoonfuls at the beginning of an attack; to be repeated every fifteen minutes if required.

℞	Chloroform.	ʒj	Syrup Acaciæ	ʒiv
	Ether.	ʒjss	Tinct. Cardam. Co.	ʒjss

Sig. One teaspoonful in water every half-hour until relieved,

℞	Ammon. Iodid.	ʒjss	Tinct. Belladonnæ	ʒjss
	Ext. Grindel. Robust.	fl. ʒij	Syrup. Pruni Virgin.	ʒjss
	Tinct. Lobeliæ	ʒij	Aq. ad	ʒij

Sig. One teaspoonful three times a day.

℞	Liq. Potass. Arsenit.	♏xxxij	Tinct. Belladonnæ	ʒiij
	Tinct. Nucis Vomic.	ʒiij	Elixir Cinchonæ ad	ʒiv

Sig. A teaspoonful three times a day, before meals. To be carefully increased by 5-drop instalments, if required, until the dose is doubled.

Fuming Inhalation:—

℞	Powdered Stramonium Leaves,	ʒj	Black Tea (in powder)	ʒj
			Iodide of Potassium	ʒj
	Powdered Anise Fruit	ʒss	Nitrate of Potassium	ʒj
	Powdered Fennel Fruit	ʒss		

The fumes of the burning powder will afford relief in the paroxysm of asthma, and will often induce sleep in cases of insomnia.

REFERENCES.—[1] "Lancet," Nov. 23, 1895; [2] Ibid., Nov. 23, 1895; [3] "Med. Record," Jan. 18, 1896; [4] "Indian Med. Chir. Rev.," Oct., 1895; [5] "Brit. Med. Journ.," March 21, 1896; [6] "Practitioner," Jan., 1896.

BLADDER (Diseases of). *E. Hurry Fenwick, F.R.C.S.*

Infection of the Urinary Tract.—Bastianelli [1] has made a clinical and experimental study of this subject. He first gives a short clinical report of thirty-seven cases of cystitis observed by him, adding in each case the result of bacteriological examination of the urine collected by catheter with all antiseptic precautions. Micro-organisms were present in every case. In twenty-five out of the thirty-seven only one organism could be cultivated. The organisms most frequently met with (twenty-one times) were microbes belonging to the coli bacillus group (including Eberth's). In nineteen cases there had been no previous surgical interference (no catheterism, etc.) whatever, before the onset of the cystitis. The author then discusses the morphology

and biology of the various micro-organisms found by him in the urine, and details the results of experimental injection of cultures into the bladder of rabbits. Unless there was previous retention (partial or complete) of urine or some morbid condition of the mucosa, the injection of micro-organisms never caused cystitis. If they were injected into the veins they were constantly found again in the urine, but did not set up cystitis unless there were predisposing local conditions. Unless pus and micro-organisms are to be found in the urine, cystitis is not present. Applying these results to the pathogenesis of vesical infection in man, the author concludes that micro-organisms, by whatever pathway they may reach the bladder, can only induce cystitis when there is some pre-existing morbid condition of the mucosa, or when there is some impediment to the free flow of urine. Under such conditions the germs multiply, and insinuating themselves between the epithelial cells cause diapedesis, suppuration, and local necrosis, finally passing, *via* the lymphatics, etc., into the circulation and system generally. Neither micro-organisms nor the aforesaid predisposing conditions can set up cystitis if acting alone, but in combination they are efficient causes of the same. The various possible pathways of infection receive full consideration at the author's hands, and a bibliography and photographs of the inculpated bacilli are attached to the monograph.

Bladder Absorption.—Walsh,[2] in a paper entitled "Absorption from the Bladder, Urethra, and Vagina," gives the opinion that his experiments warrant the conclusion that the bladder does absorb.

Absorption is a matter of lymphatics, not of epithelial cells. The various forms of cells lining different parts of the respiratory, digestive, and genito-urinary tracts play mainly a protective part for the lymphatic structures beneath. That in some places they have a heightened activity, and seemingly a selective action in absorption, is true; but at no part do they absolutely prevent absorption. Even the cutaneous epithelium, with its horny epiderm, will allow the passage of a number of substances. Rapidity of absorption depends on the thickness of the lymphatic structures in a part, and not on the character of the mucous membrane covering it. The lymphatics in the bladder are not numerous, but they are easily demonstrable.

The bladder absorbs somewhat slowly the drugs that are injected into it, but it has a true absorptive power. The urinary constituents, water and solids, are, to a certain extent, re-absorbed from the bladder when allowed to remain in it for some time.

The anterior urethra absorbs more readily and rapidly than the bladder; the posterior urethra is probably equal to the bladder.

Exfoliating Cystitis.—Savor,[3] of Chrobak's Clinic, records a case of membranous cystitis with acid urine, and the results of bacteriological investigation.

Microscopically the membrane was found to consist of a number of pus cells enclosed in a fibrinous mesh-work; there were here and there a few epithelial cells, but no muscular elements. Bacteriological examination revealed the bacterium coli commune in pure culture. Repeated experiments with the bacteria failed to produce membranous inflammation in rabbits; the result was either general infection and death or a purely local lesion. Nevertheless, as no other micro-organism could be found in the cultivations or sections, Savor considers that the B. coli must be held to have caused the cystitis. He points out that this microbe has but little power of decomposing the urine, so that in the rare cases of cystitis due to this cause an acid reaction is almost constant.

Guaiacol in Diseases of the Bladder.—Colin[4] contributes an article on the treatment of cystitis by **Guaiacol.** He finds that the injection of guaiacol carbonate has a very marked influence upon the pain, frequency of micturition, and the state of the urine in all forms of chronic cystitis. He mentions particularly cases in which tuberculous cystitis was greatly benefited by the use of this drug. The form in which he employs it is a 20 per cent. solution in olive oil, 1 to 2 grains of this being injected once or twice daily. He also recommends the addition of **Iodoform,** 1 per cent., as increasing the efficacy of the treatment. The author believes that the carbonate is superior as an anæsthetic and antiseptic to guaiacol itself, the only drawback being that it is much less soluble; and he believes that in this drug we have a very important addition to our means of treating chronic cystitis.

Technique of Supra-pubic Puncture.—Von Dittel[5] adopts the following method of supra-pubic puncture of the bladder. A two-way cannula is inserted and the bladder washed out; a Jacques catheter is then introduced (No. 8), the caoutchouc of which has the property of swelling up and so effectually preventing any escape of urine. This catheter must be changed at least once in eight days; its stopper is to be removed whenever the necessity for micturition is felt—once at least every four or five hours. When introduced in this way the foreign body seems much less likely to induce vesical catarrh than if inserted *per vias naturales;* this is probably due to the absence of the bacteria of the urethra. The puncture has a great tendency to spontaneous closure, which is a manifest advantage when the indications for its employment have been obviated. Von Dittel has always operated in the mid line, but of late Schopf has suggested a lateral

puncture, whereby the rectus or pyramidalis is used as a sphincter and the permanent catheter done away with. One disadvantage of this method is that the puncture requires keeping open by the nightly passage of a sound or drain. Furthermore, von Dittel has shown that the depth of the peritoneal pouches enclosed by the urachus, obliterated hypogastric arteries, and epigastric arteries, is very variable, so that in some cases but a very small portion of the anterior wall of the bladder is free from peritoneum. In such instances lateral puncture may lead to perforative peritonitis, and of this the author records one fatal case. He has therefore abandoned Schopf's procedure and reverted to his own former method. He has found, however, that the poorness in vessels of the linea alba sometimes leads to necrotic changes round the puncture, and therefore now adopts the plan, particularly in old people, of operating just at the edge of this tendon.

On the Treatment of Encysted Vesical Calculi.—F. A. Southam[6] remarks that though encysted vesical calculi are of somewhat rare occurrence, it is probable that they are present more frequently than is generally believed, and that they account for some of those obscure cases of chronic cystitis for which it is often difficult to find a cause. A case is quoted by the author which illustrates the advantage of suprapubic cystotomy as a means, first of recognizing the presence of encysted calculi; and, secondly, of effecting their removal; for when purely encysted—that is, lying entirely within a saccule which communicates with the bladder by a narrow neck—it is almost impossible to detect them by sounding, or to extract them, except through a suprapubic opening.

In the literature of the subject little is said as to the means which should be taken, after their removal by operation, to prevent the recurrence of calculi in such a pouch, and though the method adopted in the case described—namely, the establishment of a suprapubic fistula—had obvious disadvantages, it appeared to be the only one which was likely to prove successful.

The patient was a gentleman, aged forty-nine. Three years previously he first had difficulty in micturition, and for two and a half years had passed no urine except by catheter, which he was obliged to use very frequently, sometimes hourly, otherwise he suffered great pain, always referred to the neck of the bladder. Had never passed blood in urine, which was alkaline and purulent. There was no perceptible enlargement of the prostate, and no stone could be detected on sounding the bladder, which was extremely sensitive, especially at its neck, the introduction of any instrument exciting very severe spasm.

On May 14, 1891, Southam performed suprapubic cystotomy, and upon exploring the bladder a small phosphatic calculus was found lying loose in its interior. On further examination, an opening, just large enough to admit the tip of the finger, was detected at the base of the bladder, a short distance behind the prostate; this led into a distinct saccule the size of a pigeon's egg, and contained within it were a number of phosphatic calculi, the largest being nearly half-an-inch in diameter. The prostate was slightly enlarged, a collar-like projection surrounding the vesical orifice of the urethra. The calculi were all extracted from the saccule and the collar projection of the prostate removed as completely as possible with scissors. Recovery was complete. The operation was followed by marked relief to the patient's symptoms, as he could hold the urine, which became clear and acid in reaction, for five or six hours without any discomfort, though he still required a catheter to empty his bladder. The relief continued for about twelve months. At the end of this period in spite of the fact that he had regularly washed out the bladder since the operation, he began to suffer from the same symptoms as before (the urine again becoming alkaline, and containing a large quantity of pus and mucus). On sounding the bladder a small calculus was felt lying loose in its interior.

In April, 1893, the bladder was again opened above the pubes, a small phosphatic stone removed from its interior and a number of similar calculi were extracted from the same saccule as at the previous operation. The question of excising the saccule and suturing its communication with the bladder was considered, but as this procedure would have involved opening the peritoneal cavity, and the urine was in a foul and septic condition, it was not thought safe to attempt it.

A suprapubic fistula was therefore established, and for two years after the second operation the patient continually wore in the wound a slightly curved vulcanite plug (three and a quarter inches in length and three quarters of an inch in diameter), with a flange at its outer end to prevent its slipping altogether into the bladder. The plug, which accurately fitted the wound, was retained in position by a canvas belt, and bored, so as to admit a No. 8 Jacques catheter, one end of which projected into the bladder, while the other was connected with a urinal attached to the patient's leg. In this way the bladder could be kept continually drained, while by the removal of the plug its interior could be washed out much more thoroughly than was possible in the usual way—namely, through the urethra alone.

Since April, 1895, he has worn a solid plug in the opening by day; by this means he is able to dispense with the urinal in the daytime,

and he finds that if he draws off the urine per urethram every three or four hours he can keep quite dry even when walking about.

At the beginning of the present year another attack of cystitis occurred, and on washing out the bladder (as is still his daily custom), a small phosphatic calculus came away through the suprapubic opening. The escape of the stone was followed by a subsidence of the cystitis, of which there has been no recurrence.

As two years and a half have now elapsed since the second operation, the advantage of the suprapubic fistula as a means, first of thoroughly irrigating the bladder and keeping in check the cystitis ; secondly, of allowing the escape of calculi which may form in the bladder, is therefore well established.

The patient is quite free from bladder symptoms, and suffers remarkably little discomfort from the presence of the permanent suprapubic opening.

The Clinical Significance of the Simple Solitary Ulcer of the Bladder.—E. Hurry Fenwick[7] remarks that our knowledge of the clinical history of non-malignant ulceration of the bladder, other than that due to tuberculosis, is meagre and inaccurate. The diagnosis and prognosis of such simple lesions of the mucous membrane in precystoscopic times were beset with difficulty. Even the finger of an experienced operator could not detect an ulcer unless it had eaten deeply or was lime-encrusted. The author is convinced that many simple forms of ulceration are met with, which are wrongly diagnosed as tuberculous, and as wrongly considered incurable.

Most of the author's cases of simple solitary ulcer have occurred in young men at or about the age of twenty. They have had no venereal history. The onset has been sudden, consisting in slightly increased frequency of micturition. Blood has subsequently appeared, and the hæmaturia has been intermittent ; but the marked feature has been a constant pain at one part of the penile urethra. In some this has been greatly increased by exercise, or by jolting, or over-holding water. Some walk about guarding their penis with their hand thrust through an opening in the trouser pocket, to prevent it being shaken or jarred. Although pain is a marked symptom, it is not pathognomonic. Other salient features exist, and these combine to make up a clinical picture, which can be readily recognized and the diagnosis made without the aid of the cystoscope.

The life history of the "solitary" ulcer may be divided into three stages :—

I.—The first stage, of very variable duration, is before the advent of cystitis. It is most important to recognize the disease in this stage,

for in it the surgeon may interfere to the best advantage. The length of the first stage is very variable ; in one of the author's cases it had already lasted some years.

II.—The second stage is that of cystitis. In common with all forms of chronic ulceration or necrosis of the vesical mucous membrane, the "solitary" ulcer shows a marked tendency to become encrusted with phosphate of lime upon the supervention of cystitis. From the date of the commencement of this deposit the character of the symptoms alters. The phosphatic crust becomes heaped up like a limpet shell, which it resembles visually. From time to time pieces break off, and are passed with more or less suffering, or they are retained and increase in size until they form definite calculi. As the fretted bladder becomes more and more inflamed by the irritation of these rough crusts, so the grade of the cystitis increases in severity ; an interstitial cystitis ultimately supervening which reduces the capacity of the viscus.

In some bladders, especially the female organ, there is a tendency during the second stage to form "contact" ulcers. A corresponding limpet-like, lime-encrusted ulcer forms on the anterior wall just above the urethral orifice. There is here in the female bladder a distinct ledge, and if this position be neglected and left unscraped, the patient will not be cured. This second ulcer, the author believes, is often due to the actual abrasion of the anterior wall against the basal calcareous collection, as the bladder empties. Once formed it becomes very quickly coated with lime deposit. In cystoscopy, these ulcers resemble in appearance the stalagmite and stalactite collections seen in limestone districts.

III.—In the third stage the mucous membrane has become more or less destroyed, but the areas affected have skinned over. The bladder is a mere inelastic bag holding an ounce or so. The patient is troubled by extreme frequency of micturition or suffers from incontinence. This stage is probably rarely reached ; the ascending pyelitic changes which affect both ureters and kidneys generally terminate the sufferings of the patient toward the end of the second stage.

Diagnosis.—A careful enquiry into the onset symptoms is of the highest importance. If repeated, causeless, sharp hæmaturias, with increased frequency of micturition and urethral pain, be complained of by a young adult of either sex, without venereal history or evidence of stone or tubercle, we have in all probability to deal with ulceration of the bladder. Maternal phthisis, extreme vesical irritability at night, and pale neutral murky urine of 1010 specific gravity, point to tubercu-

losis. On the other hand, constant penile pain, clear good-coloured urine of specific gravity 1020, and an undisturbed night indicate the possibility of the solitary ulcer being present. This latter suspicion is strengthened if morphine per rectum or a nitrate of silver bladder wash subdues the frequency of micturition. Of course a glance with the cystoscope is sufficient in the early stages to arrive at a correct diagnosis. In the solitary ulcer the sheen of the rest of the bladder is perfect, and the capacity normal. In tubercle the posterior wall is seen patched with areas of vivid red, and peeling from them are the white flakes of necrotic tissue, whilst the capacity of the bladder is reduced at the very outset.

Prognosis and Treatment of the Solitary Ulcer.—The prognosis of the solitary ulcer is excellent. The author has even seen them heal spontaneously. The best form of treatment in the first stage is **Sandal Oil,** followed by **Maltine** and **Cod-liver Oil**, small doses of **Mercury** at night, liberal diet, and fresh air. Should the ulcer prove obstinate, **Curettage** will have to be performed.

Treatment in the Second Stage.—No medicine is reliable when once the ulcer has become encrusted with lime phosphate. Vesical washes are better. Lactic acid from 1 per cent. or nitrate of silver or acids are of use, but they are very trying and uncertain. The best way is to scrape the surface of the ulcer. In men this must be done perineally or suprapubically. In women, who seem to be particularly prone to this form of ulcer, curetting is easy enough. A 28 (Fr. gauge) speculum is introduced per urethram in the Trendelenburg position, and the ulcer scraped every other day under the electric light. It is surprising how rapidly cases in the earlier stages improve after this treatment. A fortnight may be sufficient to cure an ulcer of months' duration. But when the case is advanced much patience and perseverance are necessary.

Fallacy.—It must be distinctly understood that the simple ulcer repays active curettage, but tuberculous ulceration resents such a proceeding. The very favourable reports which have appeared from time to time in the Press of cure of tuberculous ulcer of the bladder after curettage and drainage have, in some instances at least, probably, been the record of attacks upon the simple solitary ulcer which so nearly resembles the tuberculous in its symptoms, but which differs from it so markedly in its prognosis.

REFERENCES.—[1] "Brit. Med. Journ.," Oct. 26, 1895 ; [2] "University Medical Mag.," Sept. 1895 ; [3] "Wien. klin. Woch.," Oct. 31, 1895 ; [4] "Journ. de méd.," Jan. 26, 1896 ; [5] "Wien. klin. Woch.," Nov. 28, 1895 ; [6] "Brit. Med. Journ.," Dec. 14, 1895 ; [7] Ibid., May 9, 1896.

BLENNORRHAGIA.

Synopsis.—(Vol. 1896, p. 178.) In female, **Corrosive Sublimate Injections, Vaginal Tampons of Glycerine,** combined with **Antiseptics and Narcotics**; for pain, **Revulsives** to abdomen; **Emollients and Balsamics** for urethritis. In sub-acute cases, **Potassic Permanganate, Zinc Chloride** or **Creasote,** to destroy the gonococcus, and the cervix must be kept open.

BLEPHARITIS. *G. E. de Schweinitz, M.D.* } *Philadelphia.*
Clarence A. Veasey, M.D. }

Gradle[1], of Chicago, suggests an ointment containing about 2 per cent. each of **Sulphur** and **Resorcin** for *squamous blepharitis,* claiming that this is far better than the preparations of mercury in these cases, and this agrees with our own experience. If the scales adhere so firmly as to be detached with difficulty, they can be removed by gentle friction with a **Chloral Hydrate** solution (1 in 10).

In *ulcerative blepharitis* the first important step is to remove thoroughly the crusts. The exposed ulcers are then cauterized with **Silver Nitrate** in the form of a stick or strong solutions, and followed with the **Mercurial Salves.** There are cases which represent a mixture of the two varieties, and in these the sulphur ointment is again of value. In cases where there is no distinct desquamation, however, sulphur is of little benefit. In some instances a 5 to 8 per cent. ointment of **Pyrogallic Acid** gives excellent results. In all cases the ametropia, or diseases of the tear ducts and conjunctiva, if existing, must be corrected.

REFERENCES.—[1] "Medecine," Oct., 1895; Abstract, "Therap. Gaz.," Jan., 1896.

BOILS. *Priestley Leech, M.D., F.R.C.S.*

Van Hoorn[1] recommends the following treatment, which is worthy of a trial, and dispenses with the use of the knife: The patient's body is first made aseptic with washing with potash soap and tepid water. The boil and the surrounding skin are then well purified by means of a 1 in 1,000 perchloride solution, or a biniodide solution. The boil is then covered with a **Phenol** and **Mercurial Plaster.** This is changed daily or oftener, if necessary. If the furuncle have reached the purulent stage it bursts, and the cavity is well cleaned with perchloride solution. If treatment be commenced before fluctuation has declared itself, absorption and abortion of the boil may be looked for.

The results obtained are said to be excellent. The inflamed parts quickly return to their normal state, cicatrization is rapid, and the cure is both pleasant and prompt.

REFERENCE.—[1] "Ind. Lancet," Feb. 16, 1896, quoted from "Clin. Journ."

BONE GRAFTING. *Priestley Leech, M.D., F.R.C.S.*

Mr. Waterhouse[1] showed a girl at the London Medical Society, in whom he had tried a new method of bone grafting.

The patient had tuberculous disease of the os calcis; the whole of the interior of the bone and the outer wall were cleared away. The cavity was thoroughly douched and then carefully and tightly stuffed with minute fragments of decalcified bone, mixed into a paste with iodoform. The wound was sutured and dressed with cyanide dressing. The wound was not dressed for three weeks, by which time it had healed except a small portion of skin which had sloughed.

The wound healed perfectly, and a good result was obtained.

The chips of bone used were taken from the scapula of a lamb after the shoulder of lamb had served for dinner for the resident medical officers. The bone was decalcified in a 15 per cent. solution of hydrochloric acid, cut into fragments; placed in ether to remove the fat, and then placed in a 1 in 10 solution of carbolic acid and glycerine. For twenty-four hours before the operation, the fragments were kept in an alcoholic solution of carbolic acid.

Mr. Waterhouse has also employed this method in seven other cases after the removal of carious bone, and always with the best results.

REFERENCE.—[1] "Brit. Med. Journ.," Feb. 15, 1896.

BONE (Lesions of in Typhoid Fever).

Priestley Leech, M.D., F.R.C.S.

That suppuration occurs in bones after typhoid fever has long been known. Paget in 1876, and Keene in 1878, drew attention to these lesions. Since that time more complete bacteriological investigations have been made.

Paul-Boncour[1] gives a long article on the whole subject. The following is a short *résumé* of his paper. They are most frequent below twenty-five years of age, but have been seen above sixty. The prolonged cases or relapsing cases of typhoid are most frequently followed by bone lesions. Their appearance, as a rule, is during convalescence, but Ebermaier has seen a case commence at the thirteenth day of the fever, and Widal[2] one at the commencement of the fever.

The long bones, especially the tibia, are most frequently attacked, but the ribs and the costal cartilages are often affected. Traumatism, or repeated use of certain muscles, has been supposed to be a predisposing cause. The microbes that have been found in the pus have varied. In some cases the pus has been sterile; in others, Eberth's bacillus alone has been found, or in association with another microbe, *e.g.*, the streptococcus, staphylococcus, bacillus coli, pneumococcus,

proteus vulgaris ; sometimes the bacillus of Eberth has been absent, but streptococcus or staphylococcus has been present.

Three clinical forms are given: (1,) The rheumatic form; (2,) Acute osteo-myelitis ending in suppuration or resolution; (3,) Chronic osteo-myelitis terminating in suppuration or the formation of exostoses. The chronic form may be chronic from the beginning, or may be a further stage of the acute form. The acute form may present all the symptoms of acute osteo-myelitis. As a rule, only small superficial sequestra are found, but in rare cases large sequestra may be found firmly surrounded by newly-formed bone.

The prognosis is as a rule benign, although the suppuration may last for months or even years, and in some cases the typhoid bacillus has been found in the pus months after the attack of enteric.

TREATMENT.—The best method of treatment is, if pus be present or suspected, to make an incision down to the bone, and clear away the diseased part with a curette. Should the disease appear to be more extensive, trephining of the bone may be called for.

Parsons[3] gives the clinical histories of six cases: in five, suppuration took place. He advises thorough eradication of the diseased part. M. Catrin[4] reports a case of multiple consecutive osteo-periostitis following a severe case of typhoid fever. One focus suppurated, and Eberth's bacillus was alone found in the pus; the other foci gradually resolved.

REFERENCES.—[1] "Gazette des hôpitaux," No. 38, 1896; [2] Ibid., Mar., 1896, p. 402, and April 21, 1896: [3] "Annals of Surgery," Nov., 1895; [4] "Gaz. des hôpitaux," No. 42, 1896.

BRAIN (Surgery of the). *William Thorburn, F.R.C.S.*

Injuries.—Kramer[1] has made a number of experiments with regard to the pathology of cerebral concussion, noting especially the changes produced in respiration, in blood tension and in the action of the heart, under the influence of blows upon the head. He finds that respiration is particularly affected. In a case of experimental gun-shot injury in a dog there was immediate cessation of respiration, the thorax remaining in the position of expiration: after forty-five seconds of complete arrest fifteen artificial respirations were made and natural respiration then set in, being shallow at first, and gradually increasing to a normal depth. In cases of less severe injury respiration was either temporarily arrested and subsequently shallow for a time, or at least breathing was rendered shallower and slower. The tension of the circulation and the strength and rapidity of the heart's action appeared to be but little affected, except secondarily as a result of asphyxia. The intra-cranial tension was always raised instantly upon

receipt of the blow, rapidly returning to the normal, this change of tension being obviously due to the depression and recoil of the elastic skull. It has also been shown that increase of intra-cranial pressure is a cause of arrested or enfeebled respiration (Spencer and Horsley, Hill). It is therefore argued that "a blow to the head produces a momentary increase of intra-cranial tension, and consequent compression of the brain as a whole. The effect of this compression would be to cause an interference with the blood supply to the entire brain, and this is sufficient to account for the primary symptoms of cerebral concussion. The so-called syncopic death after severe concussion is produced by a paralysis of the respiratory centres, the cardiac centres remaining intact. This fatal result may in many cases be prevented by the prompt institution of artificial respiration." Kramer did not find cerebral hæmorrhages in his experiments, and he does not admit the view of Duret that the essential pathology is one of ecchymosis, nor that of Kocher, who attributes it to a microscopic bruising of brain tissue. (Cf. the researches of Miles referred to in the "Medical Annual" for 1893 and 1894.)

Allen [2] offers an ingenious mechanical explanation of the occurrence of injury to the brain from *contre-coup*. He assumes that, as the brain is heavier than the cerebro-spinal fluid, it will tend to sink therein and to rest upon the base of the skull.

"The accidents which usually produce injury by *contre-coup* are those in which the patient falls and strikes the occiput or the parietal region against the ground. In the former case the frontal lobes are injured, in the latter the opposite temporo-sphenoidal lobe. In either instance the part struck is downward at the time, and the brain would be in contact with this (downward) rather than the opposite cranial wall.

Fig. 7.

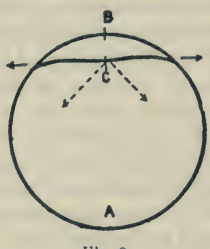


Fig. 8.

The accompanying diagrams represent sections of the cranium, drawn for simplicity as if the cavity were spherical, and with an exaggerated space between the brain and dura mater. *Fig.* 7 represents the natural condition, the brain resting slightly flattened on the downward floor, and a slight interval existing between the brain and dura mater at the upward surface, this interval occupied by arachnoid fluid. Now let the skull receive

a sudden impulse at any point, as A, *Fig.* 8. I have hinted above that the impulse usually occurs at the lower part. Such an impulse will cause the comparatively rigid skull to move as a whole along the direction from A to B. But the brain, owing to its softness, lags behind and tends to flatten itself against the cranial wall on the struck side. Some direct injury may be caused by the inward bending of the elastic bone at the point struck; nevertheless, the cranial wall distributes the force of the blow over a wide area, and renders it nowhere acute. The brain substance is supported by the bone, and protected from laceration. The chief injury must occur on the opposite side, where the cranial wall tends to move away from the lagging brain, and to afford it no support. At the centre of the unsupported surface there is a point (C) from which the soft brain substance is tending to depart in several directions in the act of flattening itself, as indicated in the diagram by the arrows. At this point of greatest strain the rupture will occur. After the first centrifugal movement which causes the rupture, there will occur a return wave towards the central point, then a second centrifugal wave, and, in fact, a series of oscillations, which will tend to aggravate the first injury, and to produce the pulping of brain substance which is sometimes observed."

Mey[3] reports a case of much interest from the light thrown by it upon the functions of the occipital lobe. A lad received a penetrating wound of the skull, due to falling upon the point of a trowel, at the junction of the right parietal and temporal bones with the occipital bone, *i.e.*, over the anterior part of the right occipital lobe which was injured. There followed complete loss of the left sides of both visual fields with concentric diminution of the right halves; the latter change was temporary only, but the hemiopia was permanent and illustrates clearly the visual function of the occipital lobe.

The *operative technique* of cerebral surgery has undergone little recent change, operation in two stages being now generally adopted, whenever practicable, and the use of the circular saw and chisel gradually superseding that of the trephine and cutting forceps. Meyer[4] advocates the use of celluloid plates to fill up defects caused in the skull by operative proceedings, and reports some successful cases of the employment of such plates. Doyen[5] has adopted a heroic method of exploring the brain by means of a large osteoplastic flap, cut from the entire side of the skull with the circular saw. An incision is carried from the glabella to the occiput immediately external to the longitudinal sinuses and is prolonged around the sides of the head in the form of a horse shoe by means of horizontal cuts; these cuts being

carried through the bone the base of this large flap is broken across, and it is held down during the operation. The dura mater is reflected in a flap or incised in the intervals between its vessels. Careful diagnosis will however commend itself to most surgeons as a better means of localising cerebral lesions, although the operation may have its uses in obscure cases. Doyen found that he could complete his operation in twenty-five minutes.

Epilepsy.—Lamphear[6] classifies carefully the various forms of epilepsy with especial reference to the suitability of different varieties for operative treatment. He makes three great groups: the toxic, reflex, and irritative. In the first are placed all epilepsies in which no *post-mortem* changes are to be detected, these being regarded as due to toxic agencies; they are not amenable to surgical treatment. The reflex varieties he ascribes to phimosis, hæmorrhoids, nasal obstruction, eye-strain, and the involvement of nerves in cicatrices; intestinal parasites are omitted from this list of causes; in the whole of this group the removal of the primary irritation is, of course, the essential indication. Local or irritative seizures are attributed to injuries, pachymeningitis, tumours, abscesses, and superficial hæmorrhages, and for these operation is indicated. In particular the following are regarded as evidences of a local lesion which should be submitted to treatment: (1,) Intense localised headache preceding or following the attack; (2,) Jacksonian epilepsy; (3,) Invariable commencement of the attack in a fixed region of the body; (4,) A well defined course; (5,) Aphasia following an attack; (6,) Paresis or paralysis following an attack; (7,) Hemiepilepsy. Much stress is laid upon the importance of employing medical treatment (bromides) in all cases, whether operation has been performed or not, for at least two years. With regard to injuries it is stated that serious injuries in the frontal region, if not trephined, are followed by epilepsy in about 50 per cent. of all cases, whereas only 10 per cent. will be so followed if trephined at the time of injury. Hence much stress is rightly laid upon the importance of immediate elevation in *all* cases of depressed fracture of the frontal region, and to a slightly less extent of the motor area.

These views are endorsed by the majority of writers who have had special experience of cerebral surgery, but unfortunately we find in the work of the last twelve months no evidence of improvement in the results obtained by late operation after epilepsy has set in. Many interesting cases have been reported, and in not a few gross lesions have been discovered and removed, but there is a want of proof that epilepsy has been permanently cured. The operation of excising wedges of the cerebral cortex does not appear to gain in favour.

Tumours.—Starr[7] discusses carefully the present position of surgery in relation to cerebral tumours, bringing up to date his book published in 1893. Here also there is little advance in the improvement of our results, but the publication of many cases has enabled us to confirm earlier impressions. The following statistical table is interesting, and indicates the probable results of an operation for brain tumour:—

	Cerebral.	Cerebellar.	Total.
Total number of cases operated on - - -	137	25	162
Cases in which Tumour was not found - -	39	9	48
Cases in which Tumour was found, but not removed	5	2	7
Cases in which Tumour was removed and patient recovered - - - - - - - - -	65	7	72
Cases in which Tumour was removed and patient died - - - - - - - - - -	28	7	35

Roughly speaking the operation failed to reveal the expected tumour in one quarter of all the cases; the mortality amounts to about another quarter, and in only about half the cases was a tumour removed without fatal result. Allowance must again be made for the tendency to record in greater number the more satisfactory results, and of the seventy-two cases which "recovered" many were doubtless rendered more or less paralytic, while in others recurrence will have ensued. On the other hand the palliative value of an operation which fails in its radical aim may be pleaded in justification of many of the unsatisfactory operations. In syphilitic or possibly syphilitic cases Starr does not advocate operation, but he pushes medical treatment to its extreme, using mercurial inunctions to salivation and iodide of potassium in quantities of 300 grains daily; with such measures many satisfactory results have been obtained. It is suggested that true tumours, which could not be syphilitic and which were certainly diagnosed, have contracted or disappeared under similar treatment, but upon this point we may remain sceptical so long as our diagnosis is so unsatisfactory as to lead to 29 per cent. of cases in which the tumour diagnosed was not found at the operation undertaken for its removal.

Craniotomy.—Dana[8] has collected eighty-one cases of craniotomy performed for the relief of idiocy aud imbecility, and he finds twenty-four deaths, thirty-five reported improved, and twenty-two reported not improved. While admitting that the proportion of cases "improved" is probably excessive he is satisfied that good is often done, but he admits that cure is never effected. In view of his own figures it is difficult to understand his statement that "as to the dangers of the operation they have been rendered practically *nil*." A death rate of nearly 25 per cent. is one which cannot be ignored, nor is the reduced

mortality of two in the last eleven cases at all equivalent to *nil*. Dana holds that two classes of patients are especially suitable for operation. The first is that of truly congenital idiots—those in which the brain is ill-developed and has not merely suffered from any lesion at or after birth; these patients are, as a rule, microcephalic. In the second group of favourable cases he places those who are imbecile without being absolutely idiotic, and in which there is no great bodily defect but rather a tendency to moral defects. Cases associated with paralysis or epilepsy he regards as unfavourable for operation. The date of operation should be not later than the fourth year in the first group of cases, but the second class may be benefited up to the time of puberty. His theory of the operation is that "it has a profound disciplinary effect upon the idiot. The method by which improvement is brought about is largely a surgico-pedagogic one. All those who have had experience in educating idiots lay stress on the importance of special pedagogics, and craniotomy belongs, in a measure, to this class of therapeutic procedure. It may have some additional value by stimulating the circulation and nutritional activity of the brain. This view of craniotomy for idiocy and imbecility lends itself readily to humour and those who wish may interpret me as intending to kill the operation by ridicule ... but ... if in one case out of four or five we succeed in making these wretched ones a little more intelligent .... I think that we may well consider that we are justified even if we only play the *rôle* of pedagogue."

Shuttleworth[9] strongly condemns craniotomy in the microcephalous, but holds that it may be of use in precisely that class of cases which Dana would exclude, a view which certainly commends itself to the present writer. His conclusions are thus tabulated:—

(1,) "That craniectomy is but rarely (if ever) of permanent benefit in cases of ordinary congenital microcephalus, in which the original defect is in the brain, not in the bone; but that it may possibly do good, by relieving pressure symptoms and favouring brain development where premature synostosis is the result of osseous hypertrophy from constitutional causes. The diagnosis of appropriate cases is, however, beset with difficulties.

(2,) "In recent traumatic cases, where epileptic or irritative symptoms arise from pressure, cranial operations are clearly indicated, as also they are in cases of mental impairment with hemiplegia or athetosis occurring from intra-cranial hæmorrhage during parturition—the "birth-palsies" of Dr. Gowers. The risk, however, of the cerebral defect arising from porencephalus, and not from compression by clot or false membrane, must be borne in mind.

(3,) "In cases of mental impairment from effusion in hydrocephalus and in tubercular meningitis, tapping may be resorted to with advantage. In hypertrophy of the brain also, trephining and section of dura mater may be beneficial in relieving undue pressure.

(4,) "Mr. Anderson's case gives expectation of, at any rate, temporary benefit by similar proceedings in cases of imbecility from inherited syphilis."

Barbour [10] has collected eighty-nine cases of craniotomy with sixteen deaths (18 per cent.) directly due to the operation; in forty-nine (53 per cent) some improvement is claimed, but the details of the improvement are seldom accurately given, and the reports are generally issued too soon after the operation to enable us to judge of its ultimate value.

In conclusion we may say that the theory of microcephaly being due to premature sutural synostosis appears to be now almost universally abandoned, and that the general tendency of recent literature is to condemn an operation which rests upon so uncertain a scientific basis as an alterative action upon the brain or an educational influence upon the imbecile. (See also "Idiots and Mentally Deficient Children.")

REFERENCES.—[1] "Annals of Surgery," Feb., 1896; [2] "Brit. Med. Journ.," May 16, 1896; [3] "Centrablatt f. innere Medicin," No. 42, 1895; [4] "Amer. Med. and Surg. Bulletin," Feb. 1, 1896; [5] "Gaz. des. hôp., p. 1252, 1895; [6] "Internat. Journ. of Surg.," No. 9, 1895; [7] "New York Med. Record," Feb. 1, 1896; [8] "Archives of Pediatrics," May 15, 1896; [9] "Journ. of Mental Science," Jan. 1896; [10] "Med. and Surg. Reporter," No. 15, 1895.

BREAST (Carcinoma of the). *Priestley Leech, M.D., F.R.C.S.*

Treatment and Results.—The past year has been marked by the appearance of several valuable papers on this subject. The most important of these are the Lettsomian Lectures by Watson Cheyne,[1] "On the Objects and Limits of Operations for Cancer." He is, of course, a believer in the local origin of cancer, and for practical purposes thinks that the three year limit may be adopted, though in rare instances recurrence takes place after this lapse of time. The first question to be decided in investigating a case of cancer is whether there is any possibility of curing the disease or not; if it is decided that the disease may be cured, not only must the noticeably diseased parts be removed, but also the parts in which the disease may have become disseminated, although apparently healthy—in other words, possibly infected lymphatic areas. Thus, an operation performed with the idea of curing the disease becomes much more extensive than one which simply aims at getting rid of the main trouble for a time,

and prolonging the patient's life. Patients should not be refused operation unless the disease cannot be removed, unless early recurrence is very highly probable, or unless operation means certain death or yields a hopeless functional result.

As regards cancer of the breast, Cheyne agrees with Halsted[2] that local recurrence must be looked upon as the fault of the surgeon in not taking away enough of the tissue. The minimum operation for cancer, which will offer anything like a real prospect of cure, must take away everything up to and including the first chain of glands. In the breast, this means the whole breast; the tissue in which the lymphatics run from the breast to the axilla, and the whole of the axillary glands. It must be remembered that the breast tissue extends nearly as far as the clavicle, well into the axillary line, almost on to the sternum, and downwards on to the origin of the abdominal muscles.

Cheyne's method of operating is as follows: The skin, co-extensive with the prominent part of the breast, is taken away, and if the tumour be situated to one side of the breast, additional portions of skin must be taken away in a V-shaped manner so that all the skin from the vicinity of the disease is removed. In addition to this, the skin must be raised all round, leaving fat and lobules of the breast, as high as the clavicle, as far inwards as the middle of the sternum, downwards on to the abdominal muscles, and outwards on to the latissimus dorsi. The skin flaps being held up, the pectoral muscle must be exposed at the upper part, and in order to ensure the removal of the pectoral fascia, a layer of the whole surface of the muscle must be taken away, and when the lower and outer edge of the pectoral muscle is reached, the fascia over the serratus magnus and the whole fatty tissue containing lymphatics as far back as the edge of the latissimus dorsi, must be detached. One then follows the fat and fascia running between the pectoralis major and minor, on to the costo-coracoid membrane, and the sheath of the axillary vein is slit open. The pectoralis minor is then raised, and with the finger and a curved blunt instrument (Dr. Greville MacDonald's periosteum detacher), the whole fat, including glands and lymphatic vessels, is removed, commencing at the very top of the axilla, under the clavicle. In this manner the whole fat, and included glands and lymphatics, are removed till everything, except the important structures in the axilla, have been removed. It is very important that the whole tissue should be removed in one piece; firstly, because it is of great advantage in clearing the axilla to have the parts dragged down by the weight of the breast; and secondly, it is very important not to cut through tissue which may be actually diseased and which may lead to subse-

quent infection of the wound. Cheyne says this danger is no imaginary one, and that recurrence may be due to this cause. This operation, in his opinion, is the least extensive which ought to be done, even in a simple case, if the object is to cure the patient. It must be modified and extended according to circumstances. Where the skin is much bound down over the tumour, although it may not be actually involved in the disease, the cutaneous lymphatic vessels, and those running in the suspensory ligaments are apt to be affected over a wide area, and here it is necessary to cut very wide of the disease. One must not be afraid of leaving a wound, the edges of which cannot be brought together. Skin grafting will readily close it. When the tumour is actually adherent to the pectoral fascia, it is advisable to take away the whole thickness of the muscle, and that part and the mass of muscle should be detached along its whole length from its origin to its insertion. Where there are one or more actual nodules in the muscle, Cheyne thinks it sufficient to remove the sternal origin of the muscle as there is not much connection between the two portions, and from a functional point of view, it is of great importance to leave the clavicular part.

When the highest axillary glands are noticeably affected, it stands to reason that the posterior triangle of the neck should be opened up. If only the lower axillary glands are noticeably enlarged, and the cancer is a slowly growing one, it is not necessary, and under these latter circumstances Cheyne has only twice seen recurrence in the supra-clavicular glands. Where the disease in the supra-clavicular glands is noticeable, cure is hopeless, the line of infection does not run so much into the posterior triangle as along the subclavian vein into the thorax. The first chain of glands opposes for a considerable time a barrier against the onward spread of the disease. In one case portions of both the axillary artery and vein were removed without any loss of vitality or other trouble in the limb.

In breast cancer he would exclude from operation : (1,) Cases of cancer *en cuirasse;* (2,) Cases where there is a large mass in the axilla involving the nerves ; (3,) Cases where large glands can be felt above the clavicle ; (4,) All cases where secondary cancers already exist elsewhere. Even where operation fails to cure, the prolongation of life is often more marked after these thorough operations than after the ordinary imperfect procedure. In comparing recent with former statistics, cure and local recurrence should be taken together. Contrary to the usual dictum, the most favourable cases of all are those of atrophic scirrhus. The only risk we have to face is shock, and contrary to Halsted's opinion, Cheyne says there is a considerable

amount of shock. The mortality can be neglected. Halsted had no deaths in fifty cases, and Cheyne had only one in sixty-one cases. The paper is accompanied by very valuable tables. He combines Halsted's regional and local recurrences under the title of "external recurrences."

The results of external recurrences in the modern more extensive operations, as compared with the older and less perfect operations, work out as follows: Halsted, 22 per cent.; Cheyne, 18 per cent. of external recurrences compared with Billroth, 85 per cent.; Czerney, 62; Fischer, 75; Gussenbauer, 64, and Volkmann, 59. The diagnosis was verified microscopically. As regards cures, taking the three years limit without recurrence, Cheyne had twenty-one cases with 42·8 per cent. of recurrences, and 57 per cent. of cures: a most encouraging result.

Jones and Platt [3] give details of fifty-five cases, of which six had no recurrence after periods of from five to eleven years. Of the fifty-five cases two died, one of bronchitis two months after operation, and one of septic absorption four weeks after operation. The cures were thus 12·5 per cent. They draw attention to the fact that recurrence in one case occurred ten years after operation.

T. Rudolph Smith [4] presents the results obtained by his father, Mr. Thomas Smith, in private practice. The collection of cases has been made under the following conditions: (1,) That the tumour in each case has been examined microscopically and found to be carcinoma; (2,) That the case is complete as far as possible up to the time of death, or else over a period of many years.

With a view of comparing the results of different operations, the cases are divided into: (1,) Those where the breast only; and (2,) Those where the breast and glands were removed at the primary operation.

The general plan of all these operations was to remove only the breast by the two ordinary elliptical incisions, unless the glands could be felt to be enlarged; if the glands were enlarged, only such glands as appeared to be diseased were removed. In no case was a clean sweep made of the axillary fascia, fat and lymphatics. In the first class, viz., those where the breast only was removed, there are twenty-five cases; of these twenty-five, nineteen, or 76 per cent. have died or are alive with the disease in progress; five are alive and free from a return of the disease after periods varying from five to seventeen years, and one died six years after the operation without any indication of a return of the disease. General result, 76 per cent. failures; 24 per cent. cures. As regards recurrences, 15 per cent. had recurrence within a year; 50 per cent. between one and two years; 35 per cent.

had recurrence after three years. One case died of recurrence fifteen and a half years after the first operation.

In the second group, where the breast and glands were removed at the time of operation, there are ten cases. Of these ten, eight have died of the disease ; one is alive with the disease in an advanced stage, and one is alive and in good health, but the arm is œdematous, and presumably the disease is in progress. In this group there were 83⅓ per cent. recurrences within the first year. One case is remarkable on account of the long period—sixteen years—that elapsed between the first and second recurrences, and her ultimate death from spread of disease twenty-one years after the first operation.

Mr. Smith forms a third group of cases of *atrophic carcinoma.* In this group there are six cases where an operation has been performed. Mr. Thomas Smith's rule has been not to operate in most cases of atrophic carcinoma. Of these six cases operated on, one died free from any evidence of disease fourteen years after the operation, one died three years after the operation from recurrence, but eleven years from the commencement of the disease ; one died thirteen years after the operation from the disease, and two are alive with the disease in progress. Roughly, one-third have been cured ; one-third have died, and one-third are alive with the disease in progress. To put these cases among a list of ordinary carcinomata would lead to entirely wrong conclusions as to the average duration of life and the number of cures after operation.

From a review of these cases it is obvious that the three years' limit, as a criterion of cure, would lead to erroneous conclusions. Putting together the cases in the first two groups, thirty-five cases in all, without any limit there are 82⅞ per cent. of failures, and 17⅛ per cent. of cures. With a three years' limit there are 57⅛ per cent. failures, and 42⅛ per cent. cures.

It must be remarked that even without any limit these cases show a very favourable percentage of cures, much higher than that given in former years. It is to be hoped that Mr. Watson Cheyne will give us the results in his cases after a longer period has elapsed since the operation.

An original, but decidedly bold treatment of inoperable cases of carcinoma of the breast has been suggested and carried into practice by Dr. Beatson.[5] The treatment is removal of the ovaries, or oöphorectomy. He was led to try this treatment by some experiments he made on lactation in sheep some years ago.

From these experiments Dr. Beatson conjectures whether cancer of the mamma may not be due to some ovarian irritation as from some

defective steps in the cycle of ovarian changes, and if so, would the cell proliferation be brought to a standstill, or would the cells go on to the fatty degeneration seen in lactation were the ovaries removed? His assumption is that the ordinary cells of the body have not lost their reproductive force, but this latter is held under control by the healthy ovaries, which are simply masses of germinal epithelium, and it is quite possible that any altered secretion of these organs or any morbid condition of them might so affect the other cells of the body as to allow their latent reproductive power to come into play, and thus confer on these cells the active proliferating powers of the germinal epithelium. If this view is the correct one, then cancer in the male should be due to some altered condition or secretion of the testicle. One or two facts point to the conclusion that the testicle seems to have the same control over local proliferation of epithelial cells as is seen in the ovary and lactation. Thus, in stags the yearly growth of the horns, which is a local cell proliferation, is under testicular influence, for if a deer is castrated its horns do not grow, and what is more remarkable still, if only one testicle is taken away, it is only the horn on that side that does not grow.

Dr. Beatson gives notes of two cases which he has treated by this method; he also gave tabloids of thyroid extract. Both cases were proved to be carcinoma by a microscopical examination, and both cases were shown at a meeting of the Edinburgh Medico-Chirurgical Society. The first case appears absolutely cured; the second is improved and quiescent. Full notes are given of both cases, and the result in the first case is most remarkable, as the condition at first was beyond any operative measures.

Lane[6] reports a case in which he certainly carried out what most surgeons would think a far too heroic treatment for cancer of the breast. He removed the breast and arm in a case with extensive involvement of the skin and axilla; a considerable portion of the clavicle was removed, and a skin flap for covering in the extensive raw surface left by free removal of the skin of the chest wall, was covered in by a flap taken from the skin covering the deltoid. The wound ran an aseptic course and the patient recovered. Too short a time has, however, elapsed to say whether recurrence will not yet take place.

REFERENCES.—[1] "Lancet," vol. i, 1896, p. 397; [2] *Vide* "Medical Annual," 1896; [3] "Lancet," vol. ii, 1895, p. 522; [4] Ibid., vol. ii, 1896, p. 374; [5] Ibid., vol. ii, 1896, pp. 104 and 162; [6] Ibid., vol. ii, 1895.

BREAST (during Lactation). *Thomas More-Madden, M.D., Dublin.*

Dr. W. C. Grigg[1] remarks that under ordinary circumstances the onset of lactation is not accompanied by any pyrexia. If the

breasts are allowed to become over-distended, or if the axillary glands become engorged and painful, a rise of temperature may follow, especially in a nervous woman. Sore or abraded nipples, superficial or deep inflammation of the breasts, which generally arise from neglect of antiseptic precautions or want of care when putting the infant to the breast, will cause pyrexia. Formerly he used to order the child to be weaned whenever the nipples became sore, but he found that abscesses of the breast commonly followed. At present he orders the child to be put to the breast, using a nipple shield; and since he adopted this practice, abscess of the breast has almost disappeared from among hospital patients. As soon as an inflammatory blush is seen on the breast, **Belladonna Ointment** should be applied on lint and covered with a linseed meal poultice. As a rule within twenty-four hours all trace of the inflammation will have disappeared. There is, however, a deep form of breast abscess, in which the outward signs may be wanting, and the nipples quite normal. The constitutional symptoms, on the other hand, are severe. The temperature goes up to 103 degrees, or higher, and you will soon notice that one breast—for this form only attacks one breast—is larger than its fellow; it is tender, and the patient may complain of a throbbing sensation within. The lochia are usually found to be offensive, if not at the outlet *always* at the mouth of the womb. An **Intra-uterine Douche** should be used at once, shreds of membrane, etc., will come away, and the breast symptoms will rapidly subside. He would therefore lay down the rule that when there occurs a sudden rise of temperature, the attendant, if a qualified practitioner, should at once examine *per vaginam*, and wash out the uterus; should a midwife be in charge, the nozzle of the vaginal tube should only be passed up the cervical canal, and the antiseptic douche given very hot.

Painting the breast with a 5 per cent. solution of **Cocaine** proved very useful in checking the milk secretion in a woman whose child had died. No unpleasant effects resulted from the application.[2] (See also "Abscess.")

REFERENCES.—[1] "Nursing Notes," March, 1896; [2] "Clinical Journ.," March 25, 1896.

BRIGHT'S DISEASE. *Prof. R. Saundby, M.D., F.R.C.P.*

The possible causes of nephritis are continually growing in number; it is generally accepted that all infectious processes are occasionally, some with greater frequency than others, followed by nephritis, and there is a very long list of poisonous substances which possess the same power; to these last Arnaud,[1] would add phosphorus from observations made upon the makers of lucifer matches in Marseilles.

Posner[2] suggests that under certain conditions the intestinal bacteria, particularly the *bacillus coli*, pass into the circulation and set up nephritis. Jacob[3] insists upon the frequency of nephritis in the gastro-intestinal ailments of newly-born children, and in this he is supported by Simmonds,[4] who also regards middle-ear disease and broncho-pneumonia as frequent causes among these little patients; Le Gendre[5] believes that nephritis in the newly-born may be due to incipient asphyxia, or to vascular disturbance, or to eczema, as well as to the causes already given.

It may be remembered that some twenty-four years ago the late Dr. Mahomed studied the conditions under which post-scarlatinal nephritis supervenes, and that he was of opinion that two circumstances were the most powerful contributories towards its production; these were leaving the bed too early, and constipation, but Turner,[5] who has had great opportunities for observation at the North Eastern Fever Hospital, says that neither the severity of the original fever, leaving bed before the third week, the weather, chills, nor constipation, seems to be the determining factor, which he finds in "a personal predisposition." He says most of the cases occur in bed. He remarks on the relative rarity of dropsy, contrary to what is generally taught.

The cause of uræmia is still an unsolved problem, but a new suggestion has been made from two different quarters that the kidneys furnish an internal secretion which is necessary to health, and that uræmia follows on its deficiency or suppression. Ajello and Paraveandalo[6] found that animals deprived of one kidney died in from eight days to eleven months with albuminuria and cachexia, while if injected with renal juice they survived in good health; even when both kidneys were removed these injections made life possible for four days or more. Renal grafts produced negative results. The alleged consequences of removing one kidney are so contrary to the experience which has been obtained from the renal surgery of the last few years that the experiments are not altogether satisfactory. But J. R. Bradford[7] has removed part of one kidney, and then extirpated the other in dogs, and he found that when the total amount of kidney tissue left was less than a third of the original whole, the animals became cachectic and died, although they passed a greatly increased quantity of urine, and more than the normal amount of urea! In no case were convulsions, coma, or vomiting observed. His attempts to graft pieces of kidney failed, and he does not mention having tried renal juice, but he inclines to the opinion that the phenomena observed, which it will be noted, differed entirely

from the classical symptoms of uræmia, were due to the failure of an internal renal secretion.

The mechanism of renal dropsy has never been properly explained, Cohnheim's hypothesis postulating an abnormal permeability of the capillaries without explaining how this is determined. Boyer and Josni[7] have observed that if after ligature of veins a local injection is made of a cultivation of the *proteus bacillus* an enormous œdema develops, and they suggest that a similar agency may be at work in the production of the dropsy of human pathology.

During recent years many cases have been recorded which suggest that in the uræmic state, localised affections of the brain may arise, which, from their transient nature, are probably not due to hæmorrhage or thrombosis, but to some toxic agency. Thus there have been described uræmic blindness, hemianopsia, uræmic deafness, transient hemiplegia, Jacksonian epilepsy, and aphasia. It is a case of the last kind, which Prof. Ballet[8] has described very fully as uræmic word-deafness: the patient could read perfectly well, and executed written orders, but was quite unable to understand the same words addressed to her orally; her own speech was defective, her phrases were partially formed and incorrect, and the same word was repeated uselessly several times. He believes that the seat of the lesion is the first temporal convolution, but he does not attempt to further define its nature. Pick[9] has described four cases of hemianopsia, and although in the only case which proved fatal he found softening of the second right occipital convolution, he thinks that an organic lesion is exceptional, and that the cause is some such local toxic effect. He is supported in this view by the negative results of dissection in cases reported by Dunin, Litten and Schnabel. Landois believes the lesion may be a capillary thrombosis dependent upon toxic causes, and instances the analogy of carbonic oxide poisoning.

Albuminuric retinitis is well known, but there are many points about it which are still obscure. It is very strange that the nephritis of pregnancy, from which recovery is so frequent that it may certainly be classed as the most benign form of Bright's disease, is yet the one most commonly associated with retinal disease. A young woman was recently under my care who was quite well until six weeks before coming to hospital, and two weeks before her third confinement, when her eye-sight began to fail, severe headache set in, and her face and legs became swollen. When seen some weeks after her confinement both discs were undergoing atrophy, the retinal arteries were degenerating, small punctiform patches occupied the central portions of both retinæ, and the left showed several large flame-shaped hæmorrhages.

R.V. $\frac{5}{10}$, field contracted to 45° on temporal side, and to 20° on nasal side; L.V. $\frac{5}{0}$, field contracted to 10°. Her urine was loaded with albumen. This poor woman's eyesight is for the most part hopelessly gone, without our being able to say why she should have suffered so severely, as her general condition was not unfavourable, and her renal trouble will probably subside.

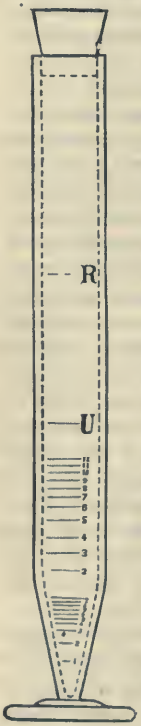


Fig. 9.
Hayward's Tube.

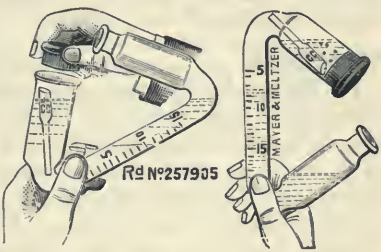
Another patient had the most intense neuro-retinitis, which affected both eyes; V. $\frac{5}{50}$ in each eye. The case was a young man, aged twenty-seven, had who served as a soldier in England, Bermuda, and Halifax, and was quite healthy until November, 1895, when he was in bed half a day with pain in the head. But he did not think anything of it, and was quite well until December, 16th, on which he took his discharge. He returned to Birmingham, feeling sick, and suffering from a severe headache. When seen he was found to have polyuria, albuminuria, cardiac hypertrophy and high tension pulse. He was very weak, anæmic and cachectic. There was no very obvious cause for his illness, but it was evident that although latent it had made considerable progress. The condition of his eyesight was as hopeless as in the previous case, but this was of less importance as the condition of the kidneys was inconsistent with any long duration of life. This case belonged, no doubt, to the small red granular kidney group, and when this occurs in young people it is frequently associated with a marked hereditary predisposition.

Dr. Chas. W. Hayward has invented a useful modification of Esbach's tube for the quantitative estimation of albumin (*Fig.* 9); its features are that it possesses a foot so as to stand by itself, and that the base of the tube is conical, and therefore more accurate in the determination of small quantities. The tube is made by Messrs. Sumner & Co., of Liverpool.

Mr. C. J. Mayhew has modified the Ureameter of Doremus (*Figs.* 10, 11); his invention has the advantages of using less hypobromite solution, and preventing more effectually the loss of any nitrogen.

It is always worth remembering how much of so-called medical science is empirical and relative; for example, when we speak of albuminuria, we ought to remember that we mean by this coagulable

urine, and not the presence of a proteid in the urine, for the more delicate tests which have been introduced of late years have shown that we may have proteid, *e.g.*, albumose in the urine of perfectly healthy persons ; a similar fate appears to have attended the introduction of the centrifuge as a means of detecting casts, for by its means Kossler[9] has found casts of all kinds in the urine of twenty-nine persons suffering, for the most part, from acute infective diseases, but without albuminuria, and in several he had the opportunity of observing *post-mortem* that their kidneys were free from any structural evidences of nephritis. But it was known long ago that a very few casts might be found without nephritis, and this result rather discredits the centrifuge than those conclusions as to the diagnostic value of deposit of casts, which are based on a very solid accumulation of clinical evidence.



Figs. 10, 11.—Mayhew's Ureameter.

Polakoff[10] recommends the use of **Bromide of Lithium** in combination with **Bicarbonate of Soda** and **Peppermint Water** as a powerful diuretic, especially in acute nephritis.

Dr. Cazal[11] strongly supports the suggestion of Lancereaux to use **Cantharides** in the treatment of nephritis, recording the recovery of four cases out of five under its use, but this remedy is no novelty, having been recommended by Ringer many years ago ; at that time it had a fair trial and obtained some temporary favour, which it failed to retain.

Macalister[12] has used **Oxygen Inhalation** successfully in a case of uræmic coma, and Foxwell[13] has tried, without very definite results, **Large Enemata of Cold Water.**

Diuretin, the convenient registered name for Knolls' sodio-salicylate of theobromine, has, slowly but surely, attained a very safe position as a valuable cardiac tonic and diuretic, useful alike in heart and kidney disease. It is given in doses of 10 to 15 grains, three to four times a day, and may be combined with **Digitalis, Digitaline, Strophanthus,** or any similar drug.

REFERENCES.—[1] "Annales d'hygiène," xxxv., 3 ; [2] "Deut. med., Woch.," 1895, No. 40 ; [3] "New York Med. Journ.," Jan. 18, 1896 ; [4] "Medical Week," vol. iii, p. 25 ; [5] "Guys' Hospital Reports," vol. li., p. 173 ; [6] "Lo Sperimentale," an. 49, fasc. 4 ; [7] "Path. Trans." xlvi,

p. 236; [7] "Compt. rend. Soc. de Biologie," 1895, No. 27; [8] "Medical Week," 1896, p. 301; [9] "Deut. Arch. f. klin. Med.," Band. 56, Heft 1 and 2, p. 69; "Berlin klin. Woch.," 1895, Nos. 14 and 15; [10] "Lancet," 1895, ii, p. 685; [11] "Gaz. hebd. de méd. et de chir.," 1895; [12] "Lancet," 1895, ii, p. 1428; [13] "Birmingham Med. Rev.," vol. 38, p. 257.

BRONCHITIS. *R. Shingleton Smith, M.D., B.Sc., F.R.C.P.*

Dr. William H. Thomson,[1] in a paper on acute bronchitis, remarks, Bronchitis is developed first in the bronchial tubes themselves only in local infections, such as tuberculosis, or in toxic conditions of the blood, as in gout. In all other cases, which constitute by far the greater number, the bronchial inflammation is by extension downward from the upper respiratory passages. In some instances the process seems to attack the different divisions of the respiratory tract simultaneously, so that it may not be apparent in the nasal cavity first; but even in these cases one can see an intimate association of sensibility between the different parts of the respiratory tract which points strongly to a specific nervous connection between them, both sensory and motor, and which has a great deal to do with the genesis of catarrhal processes.

Cantagrel[2] says, the two symptoms which most frequently demand attention are, cough and expectoration. Many practitioners find that the **Syrup of Lactucarium** is a sufficiently efficacious remedy to stop the cough and allay the irritation of the respiratory passages in children. In those who require more active medication, the syrup may be employed as a sedative vehicle. In other instances certain of the balsams, such as the **Oil of Sandalwood** or the **Oleoresin of Cubebs** or **Copaiba,** may be administered to adults suffering from chronic bronchitis, for the relief of both cough and expectoration. Many adults may also take **Sulphur-waters** with great advantage.

Dr. A. G. Auld,[3] Glasgow, observes that each individual case demands its own special investigation and a line of treatment in accordance with the results of this investigation. "Pinning our faith," as the saying is, to any particular drug or combination of drugs is conspicuously inept in this affection.

In treating these cases we have two indications clearly set before us. One is to relieve the symptoms—the distressing cough, the laboured breathing, and the uneasiness and tightness in the chest; and the other, to raise the quality of the patients' tissues so as to enable them to overcome the disease and resist its further invasion. To fulfil the first of these indications the patients have been taught to inhale the spray of **Ipecacuanha Wine** diluted with twice its bulk of water. This mixture is sprayed into the throat by the ordinary handball apparatus

morning and evening for about ten minutes, the patient being directed to spit out the liquid which accumulates in the mouth. Another process which may be advantageously combined with this is thorough and systematic **Massage** of the chest and back, with the use of a rubifacient such as the **Compound Liniment of Camphor.** So helpful and refreshing is this to the patient that many will on no account do without it.

Dr. F. de Havilland Hall[4] gives useful cautions on the use of the **Bronchitis Kettle, Poultices,** and **Over-feeding** in acute lung affections. He is strongly of opinion that the bronchitis kettle should be practically banished from the sick room, except in cases of dry bronchitis, in which patients have difficulty in bringing up tough pellets of mucus, and even then he would not order it unless there was a dry easterly wind. In cases of pneumonia he has seen nothing but harm resulting from its employment.

With regard to poultices, he concludes that except for the relief of pain they are of little or no value in the treatment of chest affections. To watch a small child with extensive broncho-pneumonia fighting for breath, and then to further hamper its efforts by ordering poultices weighing about a pound seems to him hardly a scientific procedure. He prefers a light jacket of Gamgee tissue or cotton-wool, over which some stimulating liniment may be sprinkled.

Dr. Hall says the drawbacks of over-feeding a patient are very forcibly put in a paper read at the International Medical Congress at Berlin by Dr. Andrew Smith of New York. We are apt to forget that giving an excess of food entails a double embarrassment. There is the burden arising from undigested food in the stomach, and there is also the risk of loading the blood with more nutritive material than the imperfect respiration can act upon in the process of sanguinification. In all acute affections, unless vomiting be present, nourishment should not, as a rule, be given oftener than every two hours, and about five ounces of milk, or the equivalent, are usually sufficient. Dr. Hall attributes the success which attends the treatment of pneumonia and enteric fever in hospital practice largely to the regular administration of a moderate quantity of nourishment.

In fibrous pneumonia in adults, and in infantile broncho-pneumonia, Dr. S. K. Stepp[5] has obtained very favourable results from the use of **Bromoform.**

To adults the author prescribed the following mixture :—

Bromoform	2 gm. (12 min. or 31 gr.)	Water	120 gm. (4 fl. oz.)
Alcohol	30 gm. (9 fl. dr.)		

Tablespoonful about every hour, so that the whole is taken during the course of the day.

To children affected with broncho-pneumonia he gave the following :—

Bromoform	9 to 25 drops	Water	90 gm. (3 fl. oz.)
Alcohol	30 gm. (9 fl. dr.)	Simple Syrup	10 gm. (2 fl. dr.)

Dessertspoonful every hour.

The quantity of bromoform was 9 drops for infants six months old, 15 drops for those one year old, and from 20 to 25 drops for older children. The use of this medicament has been continued for several days in succession, without any ill effect.

It is in the treatment of emphysematous asthma with orthopnœa, the author states, that bromoform is especially reliable. In these cases he administered 2 to 3 gm. (12 to 18 min. or 31 to 46 gr.) daily of the remedy, inclosed in capsules. He states that he has never failed to obtain such a decrease of the dyspnœa that the patient was able to lie in a horizontal position from the first day of treatment. At the end of two or three days the whistling sound in the bronchial tubes and the expectoration gradually diminished, and soon disappeared entirely, and the cure of the attack rapidly supervened.

Dr. Arnold Chaplin[6] has employed the **Vapor of Coal-tar** for fœtid expectoration. If heated to near boiling, it gives off a dense, pungent, irritating vapour, causing running from the eyes and nose, and a smarting sensation is felt down the trachea and bronchi. So soon as the vapour gains access to that part of the respiratory tract, coughing comes on, and whatever phlegm there may be in the bronchial tubes is expelled. After inhalation the breath has for several hours a distinct odour of the vapour. The vapour is penetrating and capable of reaching the dilated bronchus ; it is also antiseptic, and may be able to render the bronchiectasis, which it reaches, free from the putrefactive germs which cause the fœtor. A nearly air-tight chamber about seven feet square and eight feet high was built outside the hospital and connected with it by a porch. Within this room creasote was vaporized in a flat, open dish by heating with an alcohol-lamp. The inhalations lasted from one-half to one and one-half hours daily for six weeks. By protecting the eyes with watch-glasses framed in adhesive plaster and plugging the nostrils with cotton the irritation was reduced to bearable limits.

The following formulæ have been found useful[7] :—

Apomorphine Linctus.

Solution of Apomorphine (1 in 50)	℥ij	Syrup of Lemons	℥ss
Solution of Hydrochlorate of Morphine	℥jss	Spirit of Chloroform	℥jss
Dilute Hydrochloric Acid	℥j	Water to	℥iv

A teaspoonful frequently when the cough is troublesome.

In a case of *subacute bronchitis*, with asthmatic features, Dr. Eshner[8] gave the following prescription :—

Ammonium Chlorid. ʒiij Wine of Ipecac. fl. ʒij	Fluid extract of Quebracho, Grindelia, Lobelia, āā fl. ʒiv Compound Liquorice-mixture q.s. ad fl. ʒiij

Dose.—A teaspoonful every three hours.

Capillary Bronchitis[9] *:—*

℞ Ammonium Carbonate gr. 24 Syrup Tolu ʒvj French Brandy ʒiij	Syrup Senega ʒiijss Syrup Gum Arabic q.s. ad ʒiij

Give a teaspoonful every two hours.

Dr. Eshner[10] gives the following for the conditions specified :—

Bronchitic Asthma :—

℞ Potassii Iodidi ʒij Ammonii Carb. ʒj Tinct. Lobeliæ fl. ʒij	Sp. Chloroformi fl. ʒiv Vin. Ipecac. fl. ʒj Infus. Senegæ, q.s. ad fl. ʒvj

M. A tablespoonful in a wineglassful of water every four hours.

Bronchitis :—

℞ Ammonium Chlorid., Sodium Iodid. āā ʒiij	Syrup of Tolu, Syrup of Senega āā fl. ʒiss

If a spasmodic element be present, sodium iodide, 2½ grains, may be added to each dose.

References.—[1] "Med. Record," March 28, 1896 ; [2] "La Médecine Moderne," March 11, 1896, "Therap. Gaz.," July 15, 1896 ; [3] "Lancet," Dec. 28, 1896 ; [4] "Ibid," April, 1896 ; [5] "Amer. Med. and Surg. Bulletin," Oct. 15, 1895 ; [6] "Brit. Med. Journ.," and "Indian Med. Chir. Rev.," March, 1896 ; [7] "Med. Press and Circ.," Feb. 5, 1896 ; [8] "Phil. Polyclinio.," Feb. 1, 1896 ; [9] "Medical Age," Oct. 25, 1895, "Dominion Medical Monthly," ; [10] "Med. Record," Dec. 14, 1895.

BUBOES. *Priestley Leech, M.D., F.R.C.S.*

Treatment.—Neebe[1] places a ball of wool, half as large again as a man's fist, over the enlarged gland, and binds this in place by a firmly-applied spica of the groin ; a few large safety pins are placed in the bandage and through a part of the ball of wool to prevent slipping. He has employed this method for two years, and only saw one case of pus formation.

Fontau[2] treats suppurative adenitis of the groin as follows : The field of operation is shaved and rendered surgically clean ; a few drops of a 4 per cent. solution of cocaine are injected beneath the skin where the puncture is to be made ; a straight, sharp-pointed bistoury is then thrust into the most prominent part of the tumour until the pus flows. All the pus is forced out of this opening, and the abscess

cavity is then syringed with pure peroxide of hydrogen until it returns clear; it is afterwards irrigated with 1 in 5,000 perchloride of mercury solution, all of which is carefully squeezed out. The abscess cavity is now filled, but not distended, with 10 per cent. **Iodoform Ointment** by means of an ordinary conical glass syringe, previously warmed in hot water. A cold, wet bichloride dressing is applied with a fairly firm spica bandage, the cold congealing the ointment at the wound, and thus preventing its escape into the dressing.

Laub[3] recommends the method of Lang. This consists in opening the gland at the point where fluctuation is most apparent, by the smallest possible incision; the pus is squeezed out, and the cavity is injected with a 2 per cent. solution of **Nitrate of Silver,** and the wound dressed with **Iodoform Gauze.** The injections are repeated as long as pus is formed. Healing takes place in from one to two weeks, and almost no appreciable scar is left. Hebra and Lang recommend this method in cases where pus is situated centrally in a single mass.

Martin[4] has adopted the following as routine treatment of buboes:—

(1,) *Prevention.*—This is best obtained by thorough cleansing of the external sores, and this is best accomplished by means of sprays. These penetrate more deeply, cleanse the surface more thoroughly, and are less irritating than any other efficient form of washing. The solutions for choice are **Carbolic Acid** $\frac{1}{100}$ in normal saline; **Silver Nitrate** $\frac{1}{100}$, and solution of **Peroxide of Hydrogen,** half the official strength. The lesions are first sprayed with peroxide and then an antiseptic. If there is free secretion, a wet dressing, preferably black wash, is applied and renewed with every act of urination. If there is not much discharge they are dusted with a powder, iodoform, acetanilid, etc. When this dusting powder is employed, the spray must be used at least twice a day. The secret of preventive treatment lies in absolute cleanliness and ample provision for drainage, circumcision being performed if necessary.

(2,) *The Abortive Treatment.*—If a bubo be seen within the first twenty-four or forty-eight hours of its becoming painful, an effort may be made to prevent its further extension. Put the patient to bed; open the bowels by a saline. A gauze compress of eight or ten layers soaked in dilute lead acetate is applied over the bubo and held in place by a firm spica bandage, and over this a hot-water bag. The bandage and compress are kept constantly wet with solution. If no improvement takes place in twenty-four hours, dissect out the bubo and close the wound without drainage. To do this successfully all suppurative lesions of the penis must be thoroughly cleansed, and

then enclosed in a sterile dressing. The skin over the bubo must be prepared as for a major surgical operation. In case the patient presents himself with a bubo already suppurating, but covered with healthy integument, the parts are sterilized as before, the pus is evacuated through a small puncture with a tenotome, the cavity washed out with 4 per cent. carbolic or 1 in 2,000 perchloride solution, and an antiseptic compress and spica bandage applied. If the abscess cavity fill, it is evacuated again, but should it fill a third time, open it freely, curette, pack, and allow it to heal from the bottom.

If the overlying skin is thin and discoloured, immediately open, curette, and pack from the bottom.

Yocom[5] has tried with success the following method of treating suppurating adenitis: The skin over the gland is prepared as for a major operation; the inflamed gland is cut down upon, and either dissected out intact or is removed together with all the surrounding necrotic tissue by the sharp curette; the removal of this dead and dying tissue must be as thorough as possible. The cavity is irrigated with hot sterile water and packed for a few moments with hot moist sterile gauze to remove loose *débris* and check oozing; all necrotic or suspicious-looking skin is removed; the gauze packing is removed, and the whole cavity is packed full with powdered boric acid. The incision is closed throughout with interrupted sutures; no drainage is needed except in neglected cases. Where a cavity the size of a duck's egg is left, the surface about the incision is dusted with boric acid, and decidedly firm pressure is applied by a well-graduated compress of sterile gauze under a snug, evenly-laid spica bandage.

In every case so far the result has been complete union, perfect cure, and discharge from hospital in from four to twelve days.

REFERENCES.—[1] "Monatshefte f. prak. Dermatol.," May 15, 1895, quoted in "Therap. Gaz.," July 15, 1895; [2] "Med. Rec.," Dec. 28, 1895; [3] "Internat. klin. Rundschau," quoted in "Indian Lancet," Nov. 16, 1895; [4] "Phil. Polyclinic," Mar. 21, 1896; [5] "New York Med. Journ.," Jan 11, 1896.

BURNS. *Priestley Leech, M.D., F.R.C.S.*

TREATMENT.—Dr. Poggi[1] in a thesis says that **Potassium Nitrate** gives excellent results in the treatment of burns of any degree. He says it acts as a refrigerant. As it becomes dissolved in water it produces a notable lowering of the temperature of the liquid of from 5° to 9° F. If a burned hand or foot be plunged into a basin of water to which a few spoonfuls of the nitrate have been added, the pain ceases rapidly; if the water becomes heated, the pain returns, but it is allayed as soon as a fresh quantity of the salt is added. This bath, which may

be prolonged for two or three hours, may bring about the definite disappearance of the pain, and even prevent the production of blisters. The application of compresses of the same solution, also exercises the same influence; the pain is allayed, and cicatrization takes place without delay.

M. Vergely has obtained favourable results with **Calcined Magnesia** in the treatment of burns of the first and second degree. The affected parts are covered with a paste made by mixing the calcined magnesia with water. The paste is allowed to dry on the skin, and when it becomes detached and falls off, a fresh application is made. Very soon after the paste is applied, the pain ceases, and under the protective covering formed by the magnesia, the wounds recover, without leaving the cutaneous pigmentation which is so often observed to follow burns that have been allowed to remain exposed to the air.

In burns of the first degree Dr. Leistikow[2] uses the following powder:—

Zinc oxide	5 parts	Ichthyol	1 to 2 parts.
Magnes. Carb.	10 parts		

In burns of the second degree he uses the following paste:—

Zinc oxide	5 parts	Linseed oil	10 parts
Prepared Chalk	10 parts	Limewater	10 parts
Starch	10 parts	Ichthyol	1 to 3 parts

The powder and paste are renewed once a day. When inflammation is intense, the two may be employed simultaneously, the burn being first covered with a layer of powder, and the paste applied over this.

Dr. Cautrell[3] dresses burns with a solution of ichthyol in equal parts with water as soon as the denuded skin is removed, and some of the inflammation relieved. A 25 per cent. ichthyol ointment is kept constantly applied upon linen cloths.

Dr. Haas[4] recommends the following ointment:—

Aristol from	75 to 150 grains	Vaseline	
Olive oil	300 grains	Lanoline,	āā 600 grains

Dr. Paul Thièry[5] praises **Picric Acid** as a dressing for burns, and says it has kerato-genetic and kerato-plastic properties of a high order, *i.e.*, it helps to turn the epithelium into a hard keratinised condition. It is not toxic, as he has dressed an abraded surface equal to one third of the body surface with a saturated solution without harm. It stains the fingers, and the surgeon had better use india-rubber gloves, or remove the stain with a solution of boric acid. The burn is dressed with a lint dipped in a saturated solution of picric acid, and then a layer of absorbent cotton is applied over the lint. He also recommends it in eczema, lupus, and hang nails; excessive granulations, and ulcers of

the leg. Spanocchi uses it as a powder in lupus and osseous tuberculosis, after vigorous scraping with a Volkmann's spoon.

D'Arcy Power[6] says that the picric acid treatment for superficial burns and scalds is by far the most simple and satisfactory. He has given it a twelve months' trial, and is very well satisfied with it. The solution is made by dissolving a drachm and a half of picric acid in 3 ounces of alcohol, which is then diluted with 2 pints of distilled water. The method of application is as follows: The clothing is removed as gently as possible, and the burnt or scalded portion cleaned as thoroughly as possible with absorbent cotton wool soaked in the solution; blisters should be pricked, and the serum allowed to escape, care being taken not to destroy the epithelial surfaces. Strips of sterilised gauze are then soaked in the solution of picric acid, and are so applied as to cover the whole of the injured surface. A thin layer of absorbent cotton wool is put over the gauze, and the whole is kept in place by a light linen bandage. The moist dressing soon dries, and is left in place for three or four days. It is then changed, the gauze being thoroughly moistened with the picric acid solution, for it adheres very closely to the skin. The second dressing is applied exactly like the first, and is left unchanged for a week. The great advantages are: (1,) The picric acid seems to deaden the sense of pain; (2,) It limits the tendency to suppuration, for it coagulates the albuminous exudations, and healing takes place under a scab consisting of epithelial cells hardened by the picric acid. A smooth and supple cicatrix results, much superior to the one ordinarily obtained.

Dr. A. J. Hall[7] draws attention to the dangers of treating extensive burns with boracic ointment; he describes a case which on the fifth day developed an extensive erythematous eruption over the limbs, trunk, and face. During the next few days, he gradually became worse, and died on the ninth day. At the necropsy, nothing was found to account for death, and previous to the eruption, the boy was doing well. He quoted similar groups of symptoms occurring from boracic acid poisoning.

REFERENCES.—[1] "Revue médicale," Feb. 16, quoted in "New York Med. Journ.," Mar. 14, 1896; [2] "Sem. méd.," p. 487, 1895, quoted in "Amer. Med. and Surg. Bull.," Jan. 11, 1896; [3] "Phil. Polyclinic," Feb. 1, 1896; [4] "Allgem. med. Central-Zeitung," No. 72, 1895; [5] "Gaz. des hôpitaux," Jan. 18, and Feb. 27, 1896; [6] "Brit. Med. Journ," vol. ii., 1896, p. 651; [7] "Lancet," April 11, 1896.

P. G. Unna, M.D., Hamburg.
Norman Walker, M.D., Edinburgh.

Fenwick[1] has some remarks on the treatment of burns. There are two causes of death—shock, and suppuration. Shock depends, he

says, on two causes—pain, and cold. He does not dress his cases immediately. The child is simply wrapped in a blanket and kept warm. **Brandy** and **Opium** are given, and the child is not dressed till well under the influence of the latter. "Burns that don't sleep the first night die." The dressings should be applied to one part before another is exposed. He continues to administer brandy and opium, and when suppuration has set in, trusts in daily dressings and plenty of food, with brandy.

He refers to the number of cases which about the fourth day develop the signs and symptoms of scarlet fever.

Leistikow[2] recommends **Ichthyol** as a powder (oxide of zinc, 20; magnesiæ carb., 10; ichthyol, 1 to 2).

Thiery[3] recommends **Picric Acid.** He applies a concentrated watery solution. The healing is rapid, and the scars are hardly visible. The yellow stain is easily washed out.

At the Leeds and West Riding Medico-Chir. Society, Mr. W. H. Brown[4] introduced a discussion on the treatment of burns. He considers the present day treatment unsatisfactory, for the mortality is as great as twenty years ago. The causes of death are shock and septicæmia. He advises **Morphine** to allay the shock; and to prevent sepsis, continuous use of a **Warm Bath,** removal of all the dead tissue, and **Eucalyptus Oil.**

Mr. J. W. Teale used **Chloroform** at each dressing, and thought it distinctly lessened the shock. Mr. Pridgin Teale said that **Carbolic Acid** formed with the slough a kind of protective leather, which was harmless. Several spoke strongly in favour of the continuous bath.

Mr. Littlewood gave **Atropine** to allay shock. Dr. Barrs suggested **Peppermint Oil** as an antiseptic.

Dr. Trevelyan said that it had been stated that death in such cases was not due to septicæmia, but to thrombosis of small vessels in the lungs.

Mr. Ward suggested **Intravenous Saline Injections** as a remedy for the intense thirst so frequently present.

REFERENCES.—[1] "Brit. Med. Journ.," Dec. 7, 1895; [2] "Monats. f. prakt. Derm.," Nov. 1, 1895; [3] "Gaz. des hôp.," Jan. 16, 1896; [4] "Brit. Med. Journ.," Feb. 29, 1896.

G. E. de Schweinitz, M.D.
Clarence A. Veasey, M.D. } *Philadelphia.*

Burns of the Eyelids.—For a slight burn, **Carron Oil,** or finely powdered **Bismuth;** or the following may be used:—

℞ Cocaine Hydrochloride, 45 grs. | Vaseline
Lanolin 75 grs. | Distilled Water, āā 300 grs.
Mix.

For burns of the second degree :—

℞ Cocaine Hydrochloride,	23 grs.	Vaseline	375 grs.
Salol	45 grs.		

Mix.

Or,

℞ Iodoform	60 grs.	Carbolic Acid	0·75 grs.
Extract of Conium	30 grs.	Rose Ointment	450 grs.

Mix.

Before the application of the ointment the blisters should be opened and carefully washed.

REFERENCE.—[1] "Journ. des Praticiens," Jan. 11, 1896.

CÆSARIAN SECTION.

Thomas More-Madden, M.D., F.R.C.S., Dublin.

On the technique of the improved Cæsarian section Dr. H. J. Garrigues,[1] of New York, says that if possible the operation should be performed toward the end of pregnancy, but before the beginning of labour. Four assistants were desirable, and the strictest antiseptic precautions should be taken. The patient should be in the dorsal position. By percussion the operator satisfies himself that no knuckle of intestine lies in front of the uterus. The incision should be made in the median line, half above and half below the umbilicus, just enough to admit of turning out the uterus, about six or seven inches. The right hand is now introduced into the abdominal cavity and used to turn out the uterus, seizing it in the region of the left cornu. The upper part of the incision is closed with three or four silk sutures, one inch apart, and going through the whole wall. A rubber tube is placed loosely around the cervix and broad ligament, and crossed, but not tied. The uterus is enveloped in a sterilized hot cloth, and dry pads are placed front and behind with gutta-percha tissue. The elastic constrictor is now tightened, and the uterus is incised in the median line and the bleeding sinuses clamped. The left index-finger is then inserted and the incision extended with scissors or probe-pointed bistoury, carefully avoiding the lower uterine segment, where there are large veins and much less contraction than in the body of the organ. This incision should be from four to five and a half inches in length. If the placenta is inserted on the anterior wall, the incision is carried through. If the waters have not broken, the operator tears the ovum on its anterior surface ; if the ovum has already ruptured, the head of the child is, if possible, delivered first, so as to prevent the danger of the uterus contracting in front of it. If this is not easily done, the operator seizes an extremity and pulls the child out of the uterus. The cord is tied immediately with a double ligature, and then is cut between the

ligatures. If the placenta is still adherent, it is to be left alone while the uterine sutures are inserted. If it still remains adherent, the placenta is to be peeled off with the membranes. If the operation has been performed before dilatation of the cervix, this should now be effected manually in order to secure free drainage. The deep sutures should be inserted half an inch from the edge, through the peritoneal and muscular layers. After the removal of the placenta the interior of the uterus is simply wiped dry and the clots removed. No antiseptics are needed, and the uterus should not be curetted. After the tying of all ligatures, the elastic constrictor should be very gradually loosened. After all hæmorrhage had ceased, the uterus should be replaced and the abdominal wound closed as after other laparotomies. The wound should be dusted with iodoform, and dressed with iodoform gauze, gutta-percha tissue, sterilized gauze, and absorbent cotton held in place by broad strips of adhesive plaster and a many-tailed bandage. The bowels are moved on the third day, and the antiseptic dressing is changed in a week. The sutures are removed on the eighth day. The patient is allowed up at the end of three weeks. As a rule, the speaker said, the appendages should not be removed, as repeated Cæsarian section gave even a better prognosis than the first operation.

REFERENCES.—[1] "Amer. Med. and Surg. Bulletin," Feb. 1, 1896.

CALCULI. (See "Bladder," and "Kidney.")

CANCER. (See "Breast," "Larynx," "Pharynx," "Rectum," "Tongue," and "Uterus.")

CARBUNCLE. *Priestley Leech, M.D., F.R.C.S.*

TREATMENT.—Maberly[1] recommends the following treatment when the carbuncle occurs on a limb : The carbuncle and the skin immediately surrounding it are painted freely with **Iodine Liniment,** a thick pad is then placed over the carbuncle, and this pad is kept in place by an elastic bandage. The relief given is very marked, and the patient is able to go about his business as usual. The strong liniment and not the weak tincture must be used.

Dr. Conor,[2] however, believes in a more radical treatment of carbuncle, and in certain cases it is certainly the one that would recommend itself to most surgeons. It is excision of the carbuncle, supplemented, if required, by erasion. He has treated twelve cases by this method with success. The operation is carried out in the following manner :—

(1,) The patient being under an anæsthetic, a deep incision is made around the whole circumference of the carbuncle, at least half an inch

outside the infected area. Luckily, as a rule, carbuncles do not occupy parts where there are any large blood-vessels ; there can, therefore, be no excuse for stinting the depth of this incision.

(2,) With the handle of a scalpel, or a periosteal elevator, the carbuncular mass is undermined, elevated, and removed, in the same manner as a tumour of the breast.

(3,) Sometimes the disease has extended too deeply and cannot be isolated from the surrounding structures ; in such a case remove as much as possible with the knife, then strong scissors, and lastly a Volkmann's spoon. Not a trace of disease should be left. In such cases where a clean removal is impossible, swab the raw surface with a solution of 40 grains to the ounce of **Chloride of Zinc.**

(4,) A large circular wound is left and it is painted with :—

℞ Carbolic Acid	1 part	Methyl Violet	1 part
Alcohol	1 part	Water	10 parts

It is then dusted with iodoform, and packed with iodoform gauze and bandage.

(5,) When the granulating wound comes level with the surrounding skin, Thiersch's grafts are applied, which considerably hasten the cure.

The operation is not a bloodless one, but with a steady assistant armed with a dozen pressure forceps, there is no need for alarm.

Out of twelve cases thus treated eight were excised, and four required the scissors, spoons, etc. In not a single instance did the disease recur in the wound ; constitutional symptoms, in some cases severe, vanished in twenty-four hours. None of the cases had sugar in the urine, so how a diabetic patient would stand this treatment Dr. Conor cannot say. He thinks that if a thorough operation be done, pyæmia need not be feared.

REFERENCES.—[1] "Brit. Med. Journ.," Feb. 15, 1896 ; [2] "Dublin Med. Journ.," April 29, 1896.

P. G. Unna, M.D., Hamburg.
Norman Walker, M.D., Edinburgh.

Carbuncle,[1] it is said, has been arrested in its development by the injection into different parts of the tumour of 5 drops of pure liquid **Carbolic Acid** at each point.

Richardson[2] recommends **Moist Cane Sugar** as a poultice over carbuncle. He found it to act much more rapidly than linseed.

Milbourne West[3] found the subcutaneous injection of some antiseptic to be much the most successful treatment. He injects 20 to 30 minims of pure **Carbolic Acid** in **Glycerine**, 1 to 5, at different parts of the carbuncle, and dresses the surface with carbolic compresses.

Tomkins[4] found compresses painful, and that the painting of the

inflamed area with **Collodion**, perforated in the centre to allow of discharge, was much more efficacious.

REFERENCES.—[1] "Med. Record," Nov. 9, 1895; [2] "Brit. Med. Journ.," Jan. 25, 1896; [3] Ibid., March 7, 1896; [4] Ibid., March 21, 1896.

Synopsis.—(Vol. 1896, p. 203.) Treatment by injections of Biniodide of Mercury.

CATARRH (Post-Nasal).

Synopsis.—(Vol. 1895, p. 166.) Stimulating nose washes such as Ammonium Chlor., gr. v—℥j, for tenacious mucus, avoiding nasal douche and post-nasal syringe.

CERVIX UTERI (Laceration of).

Theophilus Parvin, M.D., Philadelphia.

Giles[1] states that a cervix when torn even on both sides, as a rule heals over, and as a rule a healed tear needs no operation. But the lesion may take a less favourable course, the cervical mucous membrane may become unhealthy, either alone or as part of a general endometritis; it is congested and the lips separate—the separation increased by flexion of the uterus; the everted mucous membrane is bathed in the unhealthy secretion, and erosion soon follows, and retention cysts result from the closed Nabothian follicles. The uterus usually participates in the congestion and œdema of the cervix. The ovaries may be congested, and especially if there be retroflexion, prolapse in Douglas's cul-de-sac. The patient usually complains of sacral pain, of leucorrhœa, of a feeling of weight in the pelvis and of bearing down, and sexual intercourse may cause more or less suffering.

Before remedying the lesion by operation the patient should be prepared for it. Therefore keep the patient in bed for several days, tampons and douches being used; restore, if possible, the uterus to its normal place, and application made once or oftener to the endometrium. "In some cases these measures will suffice for relief, or even temporary cure; but in any case this stage should be arrived at before repair is attempted, otherwise there is risk of non-union, and so of failure of the operation."

Our own opinion is that operations for torn cervices are rarely necessary, and are too often done from an exaggerated view of their value, and sometimes for a fee, and to cast reproach upon the obstetrician who has attended the patient in one or more labours—in one instance the patient had four labours, three living children, the tear probably occurring in her first labour. She had no leucorrhœa, no disorder of menstruation, no displacement of uterus, or at least not a symptom pointing to it—nothing whatever that suggested the necessity of a

PLATE II.

vaginal examination. And yet another doctor found a tear requiring an operation, and the former attendant was blamed for neglect!

REFERENCE.—[1] "Clinical Sketcher."

CHANCRE (Lesions simulating). *Priestley Leech, M.D., F.R.C.S.*

The following lesions may simulate chancre: (1,) Artificial indurations caused by irritants applied to simple lesions; (2,) Nodular lymphangitis, as occurs in gonorrhœa; (3,) Scabies; (4,) Secondary induration at the site of the initial lesion (Fournier's pseudo-chancre); (5,) Secondary syphilitic papules or tubercles situated upon the genitals; (6,) Suppurative gummata of the genitals; (7,) Epitheliomata of the genitals.

REFERENCE.—"Med. Record," Nov. 23, 1895.

Synopsis.—(Vols. 1895, p. 167, 1896, p. 63). Wielander's treatment by **Heat. Dermatol** locally. Sprays of **Hydrogen Peroxide, Carbolic Solutions,** or simple **Water. Di-iodoform** locally, also **Lawsonia Inermis** in powder, and **Thioform.**

CHEIROPOMPHOLYX. *Norman Walker, M.D., Edinburgh.*

The photograph *(Plate II)* gives a very fair idea of the appearances of this disease. The exact nature of it has been long a matter of dispute, some maintaining that it is due to an obstruction in the course of the sweat ducts, and others that the disease is inflammatory, and the vesicles of the same nature as in eczema. Anatomically, the latter view has proved to be the correct one, it having been demonstrated clearly by means of serial sections that the vesicles have no connection with the sweat ducts.

Unna, in his recent work, attributes the disease to a specific bacillus, which he has found in two cases. The disease is by no means so absolutely limited to the sides of the fingers as might be supposed from some descriptions. In several cases I have seen it spread to the arm, but in most the disease is confined to the hands and feet. The vesicles appear most frequently, as shown in the photograph, along the sides of the fingers, and their comparison to boiled sago grains is a very apt one. The disease once developed is very apt to recur when the patient gets into a low state of health, a circumstance which is used as an argument both by those who believe in its local origin, and by those who believe in its constitutional one. Those who believe in the latter recommend tonics and arsenic; those who believe in the former, the application of antiseptics, not only during the course of the disease, but in the form of some antiseptic soap for a considerable time thereafter. My own practice is to order patients who suffer from this disease to use one or other of the **Antiseptic Soaps** regularly when washing the hands.

CHILBLAINS. *P. G. Unna, M.D., Hamburg.*
Norman Walker, M.D., Edinburgh.

Boeck,[1] of Christiania, found **Resorcin** very valuable. He uses it in the following prescription :—

℞				
	Resorcin	1 part	Tannic Acid	1 part
	Ichthyol	1 part	Water	5 parts

The mixture must be shaken, and painted on every night. The skin shrivels, and the chilblains disappear rapidly. It must not be employed in irritated chilblain. It dries the skin, and is sometimes badly borne by delicate skins. He has found the same application useful in dryness and chapping of the lips.

Hermance[2] believes most in **Ichthyol.**

Brocq[3] says that persons who are predisposed should take a great deal of exercise, and avoid sudden changes. They should use very hot water during winter, and he advises that a pill composed of **Quinine** and **Ergotin**, of each ¼ of a grain ; powdered **Digitalis**, ½ a grain ; **Extract of Belladonna**, $\frac{1}{60}$ grain, should be taken three or four times daily before meals. This treatment is supposed to have a vaso-motor regulatory action.

REFERENCES.—[1] "New York Med. Journ.," Dec. 7, 1895 ; [2] "Philadelphia Polyclinic," March, 1895 ; [3] "Presse médicale," Dec. 28, 1895.

CHLOROSIS. *Thomas More-Madden, M.D., F.R.C.S., Dublin.*

According to MM. Spillman and Etienne, the morbid phenomena often preceding the advent of menstruation are the result of an intoxication which disappears when the function becomes regularly established. The frequency of menstrual disorder in chlorosis was well known. The ovary might be regarded as: (*a*,) A gland having an external secretion, namely, the ovum ; (*b*,) A gland having the function of eliminating organic toxins by means of the menstrual blood ; (*c*,) A gland with an internal secretion which, like that of the testicle, plays an important part in general nutrition. If chlorosis is a disease of the ovaries, these three functions are modified or abolished, and with the suppression of menstruation a special intoxication is developed constituting chlorosis. The bad state of the general health in turn hinders the cure of the ovary. If, therefore, the product of the internal secretion of the ovary could somehow be introduced into the economy, it appeared to the authors likely that a cure both of the local ovarian mischief and of the systemic intoxication might be effected. They used three substances : sheep's ovaries in the fresh state, dried ovary, and ovary juice prepared by the method of Brown-Séquard and d'Arsonval. Six chlorotic girls were treated with these sub-

stances; and the authors conclude that, in the treatment of chlorosis, **Ovarin**, by facilitating the elimination of toxins and introducing into the organism an antitoxic principle, seems to have a favourable influence on the general state, increasing the number of corpuscles and promoting the reappearance of menstruation. Mairet agreed that injections of ovary juice improve nutrition.

REFERENCES.—"Sem. médicale," Aug. 19, 1896, and "Brit. Med. Journ.," Sept. 12, 1896.

CHOLERA. *F. de Havilland Hall, M.D., F.R.C.P.*

Milia[1] says: "If a case was seen early—that is to say, soon after the purging or vomiting, or both, appeared—and if, as often happens, signs of collapse were not present from the beginning, an **Astringent Mixture** with **Opium** was administered every two hours for two or three doses. In such cases in which, on account of persistent vomiting, mixtures were not retained, **Morphine** hypodermically, or **Opium** and **Tannin** enteroclytically, were administered. Two ready-made mixtures were largely used. Mixture No. 1 contained dilute sulphuric acid, tincture of opium, carbolic acid, and creasote, and mixture No. 2 was made up with acetic acid, spirits of nitric ether, camphor, and ammonia aromatica. In the first stage mixture No. 1 was administered; a large mustard plaster was applied over the epigastrium, hot-water bottles and friction, or hot-water bath, were employed to relieve cramps. Acidulated water, or mint and chamomile tea, was given to quench thirst. In the collapse stage, opium and its preparations were strictly forbidden, and mixture No. 2 was largely used. During reaction, if the temperature rose, a bath was used; if the liver was inactive, small doses of calomel were given. To stimulate the kidneys, tincture of cantharides was given internally with local counter-irritation. In cases in which there were signs of renal congestion or nephritis, cantharides was not used. **Pilocarpine** hypodermically acted very well in a few cases. To relieve cerebral congestion a few leeches applied behind the ear often produced satisfactory results. Eighty cases were treated by the writer at the cholera hospital in Srinaga strictly according to the above method; forty were cured and forty died, showing a death-rate of 50 per cent."

Though the results obtained by the above-described plan of treatment may be considered satisfactory, a simpler method gave even a better result: Twenty-nine cases were treated with nothing but water from beginning to end; copious drink of **Sterilized Water** allowed; fifteen recovered, fourteen died, showing a death-rate of 48·8 per cent.

Neufeld[2] has experimented with **Pyoktanin.** He commenced by injecting small doses of a 1 per cent. aqueous solution subcutaneously, gradually increasing to a $\frac{1}{6}$ grain every two hours. In addition it was also given by the mouth; the maximum dose in successful cases being 110 grains in six days.

With reference to the results obtained from March, 1894, to July, 1895, in 19,473 individuals who had been subjected to *anti-choleraic inoculation*, Dr. Haffkine[3] said: "They seem to indicate that in inoculation by this method we possess a means of effectively combatting cholera epidemics." It seems that the effect of the vaccines lasts but a limited time, and Dr. Haffkine says that of course the power of producing a lasting effect would increase the value of this inoculation very greatly. It is possible that such an effect can be obtained by a simple increase in the strength of the vaccines in the doses administered, but this again is a question which can be solved only by long years of observation.

In all operations done on men in India, living cholera virus was used exclusively, for the reasons that sterilised cultures or products of cultures, as a rule, produce an effect of a far shorter duration than living microbes. The symptoms in anti-cholera vaccination consist in localised swelling and pain in the side, at the seat of injection, and in an attack of fever. The pain is not more than is sufficient to prevent a soldier from putting on his belt for a couple of days, or a coolie from doing work involving bending the body or stretching otherwise the affected part.[4]

REFERENCES.—[1] "Indian Medico-Chirugical Review," July, 1895; [2] "Amer. Med. and Surg. Bulletin," Nov. 1, 1895; [3] "Med. Record," March 21, 1896; [4] "Indian Lancet," Feb. 16, 1896.

CHOREA. *Græme M. Hammond, M.D., New York.*

De Renzi,[1] after experimenting with a number of remedies, recommends the following as the best method of treating chorea: (1,) Absolute rest, avoiding any external excitation whatever, and placing the patient in a dark room; (2,) The ascending **Galvanic Current** along the spinal cord—the best results are obtained with a gentle current, progressively increased; (3,) **Arsenic,** in large doses, commencing with 20-drop doses (Fowler's solution) each day for children, and double the amount for adults. When the chorea ceases, the medicine should be continued on account of the tendency of the disease to return.

J. Madison Taylor[2] suggests the following therapeutical measures: (1,) Specific medication—arsenic, with anti-rheumatic or anti-malarial drugs; (2,) Rest to the body and proper sleep; (3,) Nutritional repair,

to counteract the depreciation and devitalization of the tissues due to their over-action; (4,) Re-education of co-ordination, an item very important, but little noticed.

Put the child to bed warmly clad, and give a diet containing an abundance of milk, fruit, vegetables, and no red meat. Bathe the patient twice daily with tepid water, giving spinal douches, followed by brisk rubbing and massage. During the first week give a laxative every second or third day to do away with any intestinal irritation or fæcal toxins. Give **Cod-liver Oil** for the anæmia, preferably in capsules, rather than iron. Re-educate the limbs by gymnastics and Delsartean exercises. Use salicylates for rheumatic pains, either **Ammonium Salicylate** with **Ammonium Bromide** in **Liquor Ammonii Acetatis** or **Elixir Calisaya.** Fowler's solution of arsenic, increased from 3 drops thrice daily by addition of 1 drop a day until toxic symptoms are produced, is the most satisfactory general method of treatment.

Waxham[3] urges that the best results are obtained if arsenic is given hypodermically. He uses the **Arsenite of Soda,** and begins with an initial dose of $\frac{1}{10}$ of a grain, and rapidly increases the dose to $\frac{1}{2}$ or $\frac{2}{3}$ of a grain without injury. Such doses by the mouth would be most hazardous. The arsenite of soda seems to be less irritating than other forms of arsenic. A 5 per cent. solution should be used, beginning with 3 minims, and gradually increasing until from 10 to 15 minims are given, and then the dose is gradually diminished.

Chorea (Huntington's).—Kronthal and Kulischer[4] report a case of hereditary chorea in which there were alterations in the pia atrophy of the convolution, thickening and degeneration of the vessels of the cortex, increase of nuclei or small-cell infiltration of the cortex, alterations of the ganglion-cells of the brain and cord, and diffuse degeneration of the white matter of the cord. The authors conclude that the primary seat of the changes which cause the choreic movements is in the cortex cerebri, consisting essentially in vascular disease, cellular infiltration, increase of nuclei, small hæmorrhages, and increase of the glia and the interstitial connective tissue.

REFERENCES.—[1] "Amer. Journ. Med. Sci.," May, 1896; [2] "Med. Record," May 9, 1896; [3] "Amer. Med. Chirurg. Bul.," Aug. 29, 1896; [4] "Amer. Journ. Med. Sci.," May, 1896.

COLLAPSE (Treatment of). *Priestley Leech, M.D., F.R.C.S.*

Schilling[1] recommends **Camphor** in the treatment of collapse; he uses a solution of 1 part of camphor to 10 parts of olive oil; as much as a gramme (15 grns.) may be used. He says the camphor leaves the body in two hours, and has no cumulative action.

Forgue[2] recommends the following treatment in collapse after prolonged operations, extensive loss of blood, or after injuries, with much shock and loss of blood. The patient should be placed in such a position that the head is lower than the rest of the body; hot bottles or bricks should be placed around him, and active rubbing should be used. Hypodermic injections of **Ether** and **Caffeln** are also of value. It is often beneficial to administer **Champagne** or **Brandy** by the rectum.

For the purpose of stimulating the heart, a momentary whiff of **Nitrite of Amyl** is of service, and the respirations may be stimulated by slapping the face with a wet towel, by Laborde's rhythmic tractions of the tongue, by inhalations of oxygen, and Sylvester's method of artificial respiration.

If collapse be due to hæmorrhage, the transfusion of **Artificial Serum** or normal **Saline Solution** is of the greatest service.

REFERENCES.—[1]"Münch. med. Woch.," Sept. 17, 1895; [2]"Journal des Praticiens," Jan. 18, 1896, quoted in "Therap. Gaz.," Jan. 15, 1896.

COMA. *Græme M. Hammond, M.D., New York.*

The following methods of treating coma are highly recommended by "La Tribune médicale."[1] If the coma is due to affections of the brain and meninges :—

(1,) Place the patient in a well-aired room.

(2,) Massage the entire body with alcohol and water.

(3,) Apply sinapisms to the legs.

(4,) Apply four leeches to the mastoid region or bleed from the arms.

(5,) Give the following purgative enema :—

℞ Sodii Sulphat.	℥j	Aqua ad	℥viij
Sennæ fol.	℥ss		

M. et. ft. infusio.

(6,) Practise rhythmical tractions of the tongue by the method of Laborde.

(7,) Feed patient with milk and bouillon; or, if deglutition is too difficult, give this nutritive enema :—

℞ Yolks of two eggs		Milk	f.℥viij
Peptone (dry)	℥ss		

Coma of Infection and Toxication.—(1,) Give every hour a subcutaneous injection alternately of ether and caffeine :—

℞ Caffeinæ	gr. xlv.	Aquæ bull.	℥iij
Sodæ Benzoat.	℥j		

Sig. Dose, ♏x.

(2,) Every four hours give a tablespoonful of the following :—

℞ Acetate of Ammonium	ʒj	Tr. Jalap	f.ʒjss
Tr. Musk	gr. xv	Tr. Gentian	q.s. ad. f.ʒiv
Essence of Mint	♏iv		

(3,) Provoke diuresis by large injections of cold water (a quart and a half).

(4,) If poisoning is indicated, give the special antidote required, and induce vomiting by the subcutaneous injection of apomorphine,—gr. $\frac{1}{12}$.

Neurotic Coma.—Give the following enema :—

℞ Tr. Valerian	f.ʒjss	Yolk of one Egg	
Musk	gr. xv	Water	f.ʒj

Compress the carotid arteries with the fingers. Practise the rhythmical traction of the tongue, and pass interrupted electrical currents through different parts of the body.

REFERENCE.—[1] "Ind. Med. Chir. Rev.," April, 1896.

CONJUNCTIVITIS. *G. E. de Schweinitz, M.D.,* *Clarence A. Veasey, M.D.,* } *Philadelphia.*

Reports during the year of cases of *diphtheritic conjunctivitis* that were treated with **Antitoxin Serum** seem to give to this remedy an assured place among ocular therapeutics. Morax,[1] Koenigshäfer,[2] and Recken,[3] have given very favourable reports concerning its use. Darier,[4] and others have recorded cases of pseudo-membranous conjunctivitis in which it was employed without benefit. The rule seems to be that if there is any doubt as to the true or false nature of the case to employ the remedy without waiting to establish a diagnosis. If the case be one of true diphtheritic conjunctivitis it will improve at once ; if one of pseudo-membranous conjunctivitis, there will be little, if any, improvement. The local treatment of the eyes is carried out in the same manner as would be done were the antitoxin injections not employed.

The use of **Formol** as a cleansing agent and germicide in the treatment of the different varieties of conjunctivitis, and especially in *purulent conjunctivitis*, both of the new-born and of the adult, seems to be gaining in favour. Burnett[5] reports its use in such cases and thinks much of its value is due to its rapid diffusibility. The strength most frequently employed is a solution of 1 in 1000 or 1 in 2000.

W. Nicati[6] recommends **Bismuth Loretinate** dusted into the eye in the various forms of conjunctival inflammation, and claims that it is of especial value in the treatment of *phlyctenular conjunctivitis*, promptly relieving the pain and photophobia. In the treatment of *granular conjunctivitis*, or trachoma, E. A. Neznamoff,[7] of Kharkoff, advises the

topical application of a 1 to 3 per cent. solution of **Pure Iodine** in **Liquid Vaseline.** It is applied to the palpebral conjunctiva twice daily, and by the third or fourth day great improvement is noticeable. In cases of pannus, infiltrations and superficial opacities of the cornea, it acts with great promptness and benefit. In cases of recent trachoma a stronger solution should be employed (3 to 5 per cent.), and as liquid vaseline will only take up $1\frac{1}{2}$ per cent. of iodine, a little sulphuric acid, or better still, rectified petroleum, should be added in order to get a more concentrated solution of the iodine. The discomfort produced by the stronger solutions is of short duration.

Scott [8] has devised a new method of treatment for *vascularized cornea*, which he describes as follows :—

The eye having been anæsthetized by cocaine, the lids are held open by a speculum. A fair-sized magnifying glass is then held in one hand, and with the other all the vessels in the cornea and as many of their branches as possible are slit up along their entire length by means of a narrow Graefe's cataract knife. Each individual vessel having been thus opened along its whole length, it is impossible for any anastomosis to be established. It is always advisable, on account of the bleeding which obscures the corneal surface, to begin at the margin and work toward the centre of the cornea. The case is treated for a few days afterward as if it were a simple corneal abrasion.

REFERENCES.—[1] "Annales d'oculistique," cxiii., p. 238 ; [2] "Med. Corr. Bl. d. wurtemberger Landesvereins," Bd. 13, 1895 ; [3] "Centralbl. f. prakt. Augenheil," 1895, p. 229 ; [4] "Annales d'oculistique," cxiii, p. 427 ; [5] "Ophthalmic Record," March, 1896 ; [6] "Medical Weekly," 1895, iii., p. 429, and Abstract in "Amer. Med. and Surg. Bulletin," Nov. 1, 1895 ; [7] "Lancet," Feb. 8, 1896 ; [8] "Ophthalmic Review," Nov., 1894 (quoted from "New York Med. Journ." April 11, 1896).

CORNEA (Ulcers of the). (See "Ulcers of the Cornea.")

CORYZA. *R. Shingleton Smith, M.D., B.Sc., F.R.C.P.*

Foxwell[1] defines catarrhal fever as an acute specific disorder of a week's duration, occurring with or without fever; characterised pathologically by an exudation—serous, fibrinous, cellular, or membranous—from one or more of the lining membranes of the body; with, in some cases, acute glandular inflammation; caused by a micro-organism, probably the pneumococcus of Friedländer, and mildly contagious.

This definition gives us a good working hypothesis with regard to catarrhal conditions, and gives a sufficient explanation of the difficulty in arresting the malady by any medicinal or other methods.

Bulkley[2] gives 20 to 30 grains of the **Sodium Bicarbonate** in 2 or 3

ounces of water, every half-hour, for three doses, and a fourth dose at the expiration of an hour from the last one. Two to four hours are then allowed to elapse, that the effect may be seen, and the four doses are repeated if there seems to be necessity, as is frequently the case. After waiting two to four hours more the same course may be taken again, although this is not often necessary if the treatment has been begun early in the course of the "cold." He has known the doses to be repeated four times, with final good result.

Wunche,[3] of Dresden, has employed inhalations of **Menthol-chloroform** in the strength of 5 or 10 per cent. for the purpose of aborting acute coryza. A few drops of this mixture are placed upon a handkerchief, and five or six deep inspirations are taken. By this means the nasal secretion is augmented at first, but afterwards diminished, and the sore throat and laryngeal symptoms which are frequently found associated with a cold in the head are relieved.

The following **Nasal Spray** may also be employed after the inhalations:

℞ Ichthyol 1 part | Distilled Water 97 parts
Ether and Alcohol, of each 1 part |

W. Schnee[4] treats coryza by **Percussion of the Terminal Branches of the Nerves** supplying the mucous membrane of the nose with an indiarubber hammer. The treatment is based on the principle established experimentally by Golz—viz., that slight shocks continued for a short time cause contraction of the blood-vessels, stronger and more prolonged shocks being followed by vascular dilatation and increased afflux of blood. Light percussion for a short time at frequent intervals is therefore indicated in acute catarrh following chill; stronger percussion continued for a longer time in inveterate chronic cases. The spots to which the indiarubber hammer should be applied are—the part of the forehead situated above the root of the nose, and extending laterally to the middle of the eyebrow; the whole outer surface of the nose and a small portion of the cheek situated immediately below the malar bone in the course of the infraorbital nerve. The tappings should be immediately followed by frictions with the thumb and forefinger on the external part of the nose, starting from the root and proceeding downwards. If the skin is dry the fingers should be smeared with some fatty substance.

Gabriel Roux,[5] of Lyons, recommends **Inhalation of Eau-de-Cologne** as a remedy in coryza; Onimus, of Beaulieu, speaks well of **Sniffing up Lemon-juice.** The method is as follows: The hands are rubbed with some drops of this liquid, and are then held in front of the nose and mouth while four to six deep inspirations are taken. The attacks of sneezing cease after the first inhalation. The nasal secretion at first

increases, but soon diminishes, and disappears after one or two inhalations taken in the course of the day. The pharyngeal pain is also relieved by the inhalation.

REFERENCES.—[1] "Lancet," June 15, 1896; [2] "Med. Record," Jan. 18, 1896, "Therap Gaz.," April 15, 1896; [3] "Journ. de méd. de Paris," March 1, 1896, "Therap. Gaz.," June 15, 1896; [4] "Practitioner," Feb., 1896, "Revue de laryngologie., d'otologie et de rhinologie," Nov. 1, 1895; [5] "Practitioner," Feb., 1896.

COUGH. *R. Shingleton Smith, M.D., B.Sc, F.R.C.P.*

Dr. William H. Thomson[1] says that against bronchial occlusion nature had provided one watchful guardian, cough. The treatment of bronchitis resolved itself practically into the management of a cough. With all cases of bronchitis there was associated more or less of the purely irritant and useless cough. This could be, and should be controlled, while the expectorant cough should be encouraged. He always listened to just how much there was of the purely irritant cough in bronchitis, and sought to suppress it, while he encouraged the expectorant cough. The latter was attained by rendering the secretions fluid. One of the best agents was **Linseed Oil in Emulsion.** The irritant cough called for sedation, and this could be effected without weakening expectoration. **Opium** was the proper anodyne in all cases of inflammation, but it should be given in the smallest possible dose in bronchitis. But the cough of irritability was as effectually and more safely controlled by **Chloral.** When there were symptoms of tumefaction of the bronchial mucous membrane without secretion, he made **Counterirritation** over the chest by pepper, a teaspoonful in a pint of boiling water, applied on cloths.

At the same time the dyspnœa was quickly relieved by starting the secretion from the dry mucous membrane by giving teaspoonful doses of a solution of **Tartar Emetic,** 1 grain to a teacupful of water. Nauseating expectorants were not indicated unless in some cases of irritant bronchitis. In capillary bronchitis emetics were used to dislodge secretions. Here we must direct our efforts to maintaining the heart. Brief and quick applications of **Red-pepper Infusion** often aroused the flagging organ. The **Act of Swallowing** also caused cardiac stimulation. He saw no reason why we should not try to combat pulmonary collapse by gentle **Artificial Respiration,** and he had saved life by Sylvester's method.

Dr. Robert H. Babcock,[2] Chicago, sums up the treatment of cough as follows: In the last stages of consumption the patients are often robbed of sleep and exhausted by the frequency of their cough. In such cases the **Phosphate of Codeine** is preferable to the sulphate,

because it contains a larger percentage of the base, besides being readily soluble and suitable for hypodermic administration. In cases of *la grippe*, with frequent paroxysmal cough, Dr. Babcock has employed hypodermic tablets of codeine phosphate, and has been greatly pleased with this mode of administration. Quite recently in several cases in which dry spasmodic and prolonged cough called for a sedative and antispasmodic remedy he has obtained quite brilliant results from **Bromoform** combined with gelsemium, as follows: Bromoform, 113 grains; tincture of gelsemium, 120 grains; syrup of lactucarium, enough to make 2·25 ounces; powdered gum arabic, a sufficient quantity. A teaspoonful three or four times a day was the dose prescribed.

In a case in which severe and almost incessant coughing, due to acute bronchitis, threatened to break down the heart, already greatly enfeebled from mitral and aortic disease, the following prescription accomplished the very happiest results:—

℞ Bromoform,	113 gr.	Syrup of Lactucarium,	q.s. 4 oz.
Codeine Phosphate,	15 gr.	Powdered Gum Arabic,	q.s.
Compound Syrup of Squill	150 gr.		

M. et fiat emuls. Sig.: Two teaspoonfuls every two hours.

Beverley Robinson[3] calls attention to the cause and treatment of *obstinate coughs*. One of these is the cough which is dependent upon an engorged lingual tonsil. Here there is no chest affection, no apparent throat trouble sufficient to cause the distressing symptom. Anodynes fail to afford relief, and sprays and vapours are equally inefficient. Along with the cough there may be a continuous desire to swallow, and the effort of swallowing may be somewhat disagreeable. There may also be a constant feeling of constriction, which increases when the patient lies down at night. Such patients are sometimes looked upon as phthisical, and sometimes as hysterical. A laryngoscopic examination shows that the fossa between the epiglottis and the base of the tongue is more or less filled up and distended by a mass of lymphoid tissue. Sometimes large veins pass over the surface, and from these occasionally bleeding occurs. The causes of the enlargement are menstrual derangement, continual constipation, and an underlying gouty condition, to which microbic infection is added. This form of cough is relieved by the internal use of **Salicylates** and **Antirheumatic Drugs**, with local applications. Among these we have **Blisters**, forms of **Galvano-cautery**, and the compound **Tincture of Iodine.** The cautery is not always satisfactory on account of the secondary inflammation it causes, and the frequent application of iodine is often sufficient. The removal of a tonsil by the guillotine is not recommended, as a rule.

Another form of obstinate cough is seen, most frequently in young children. It occurs mostly at night, and is due to the dropping of thick mucus or muco-pus from the naso-pharynx upon or into the larynx. In other cases it is due to an irritation of the posterior turbinated bodies. **Removal of the Nasal Tonsil** by scraping with the finger-nail, and the application of the various antiseptic and astringent substances, relieves this condition. Such children, however, in addition, need to receive general treatment. They should receive a light supper, and the bowels should be kept in good condition.

In connection with this subject the writer speaks of coughs produced by reflex irritation from sensitive areas in the nose and pharynx. All local applications, at times, he says, are futile in such cases, and of the internal remedies which do good he prefers **Codeia** and **Terpine Hydrate.**

When the cough, as is sometimes the case, comes from aural irritation, the removal of wax and cleansing of the ear is often sufficient to relieve it. Repeated applications of **Alcohol**, or a mild **Solution of Bichloride**, over the sensitive canal are recommended. (See also "Bronchitis.")

REFERENCES.—[1] "Med. Record," March 28, 1896; [2] "New York Med. Journ.," March 21, 1896; [3] "Med. Record," Nov. 16, 1895.

CRANIOTOMY. (See "Brain.")

CYSTITIS. (See "Bladder.")

CYSTS (Operative Treatment of).

Charles S. Ryan, M.B., C.M. Ed., Australia.

Hydatid Cysts.—Hamilton Russell, of Melbourne, published last year a paper on this subject, which has provoked much discussion and no little change in the attitude of surgeons in respect of this matter. In this article the writer condemns the routine employment of Lindemann's method of operating for uncomplicated hydatid cysts, and maintains that the suturing of the adventitious sac to the external wound, and draining it, is unnecessary and illogical. He points out that for all practical purposes, the sac is only the fibrous capsule which will usually form round a foreign body, and that when the foreign body which has excited its formation has been removed, the adventitious sac may be disregarded and dropped back into the depths of the wound, and the wound closed completely.

Russell discusses the objections which have been urged against this method. The first and most obvious one that has been put forward is that the fluid poured out from the surface of the adventitia will, in cases of abdominal hydatids, escape into the peritoneal cavity. His answer to this is that in the first place there would seem no reason to

suppose that any large amount of fluid will be poured out by the adventitia ; in the second place, that the best thing that could happen to any fluid so poured out would be that it should escape into the peritoneum, for being an aseptic fluid, it could do no harm to the peritoneum, but would be rapidly removed by absorption.

In this also lies one of the chief objections urged by Russell against suturing the opening in the sac before dropping it into the abdomen ; for the sac being a structure possessing absorptive powers, which are very inferior to those of the peritoneum, the fluid would not be removed so rapidly, and would consequently be much more favourably disposed for the occurrence of decomposition, should septic material have been unfortunately introduced at the operation.

Some six years ago Bond, of Leicester, published the account of a case of abdominal hydatids in which, finding that he was unable to bring the adventitia up to the abdominal wall and fasten it there after the method of Lindemann, he sutured the opening in the sac, and closed the abdomen, with the result that the case did perfectly well.

Since that time the intra-peritoneal treatment of the sac has been only very occasionally adopted, and up to the publication of Russell's paper, Lindemann's operation has remained in almost undisputed possession of the surgical field in Australia.

In January, 1895, Bond published an account of three cases of liver hydatids, in which he had performed precisely the operation which is advocated by Russell, showing that these two surgeons are in complete accord as to the method to be pursued.

I believe the first occasion on which the operation advocated by Bond and Russell was deliberately performed, was in a case of my own at the Melbourne Hospital for Children. The patient, a boy aged ten, had a large hydatid cyst of the liver. Urged by my colleague, Mr. Russell, who was assisting me, I dropped the adventitious sac into the abdomen and closed the abdominal wound. Before doing this, however, I had cut off a large portion of the sac, and put one or two stitches into the extensive opening that was left ; both of these steps I now know to have been quite useless. This was in July, 1893. The boy made a perfect recovery, and was up in a fortnight with healing complete.

Since that case I have employed this method extensively, and a number of cases have already been published by myself and others. My own feeling is that for simple uncomplicated hydatid cysts in the vast majority of cases the method of Lindemann is greatly inferior to that advocated by Russell and Bond. Of course there will still be a

proper sphere for Lindemann's method, but it will be confined to cases of suppurating cysts, and to cysts which from their situation claim special consideration. Such are cysts of (1,) the liver ; (2,) the lung ; (3,) the kidney, and a few others more rarely seen.

Cysts of the Liver.—These call for special consideration by reason of the fact that after removal of such cysts, in a considerable percentage of cases an escape of bile will take place into the cavity of the adventitia. This fact would, *prima facie*, make it appear to be extremely dangerous to shut the adventitia up in a closed abdomen, lest the bile escaping into the adventitia should thence overflow into the peritoneum. In practice, however (and I am now able to speak with considerable experience both of cases in my own hands and in the hands of others), it has not proved dangerous. Many cases have now been recorded by Gardner, Syme, Moore, Russell, and others, in addition to myself, in which, after the complete closure of the abdominal wound, a biliary fistula has formed and discharged for a few days or weeks ; in no instance, however, has harm resulted to the peritoneum, and I believe the uniform opinion among surgeons who have witnessed this occurrence is to the effect that the fistula appears to be less troublesome, and the biliary discharge less protracted, than when it takes place after operation by Lindemann's method.

Cysts of the Lung.—Cysts of this organ, unless very small and superficial, should be treated by Lindemann's method, and no attempt should be made to close the external wound. A deep-seated cyst of any magnitude may communicate with a bronchus, or in the course of its extension it may have left so thin a barrier between the cavity of the sac and the bronchus, that it will at once give way as soon as the external wound is closed, in response to the negative pressure instituted in the thorax. There will then be a direct communication between the bronchus, sac, pleura and subcutaneous tissue of the body, and Mr. Russell tells me of a case he saw lately in which acute pneumothorax and rapidly extending surgical emphysema, brought the patient to the verge of death in a few minutes.

In conclusion I have no hesitation in expressing my admiration and gratification at this method of operating, which appears to me to be in suitable cases far superior to any that has gone before ; and I have little doubt that it will take its position from this time onwards, as the typical operation for hydatid cysts.

REFERENCES.—Russell, "Intercol. Quart. Journ. Med. Surg.," Feb. 1895 ; Bond, "Brit. Med. Journ.," Jan. 26, 1895 ; Ryan, "Austral. Med. Journ.," Aug. 1895 ; and "Austral. Med. Gazette," Oct. 1895.

DELIRIUM TREMENS. *Græme M. Hammond, M.D., New York.*

Letulle[1] recommends the immersion of the entire body of the sufferer up to the neck, in water at the temperature of 64·4 F. Further, the head should be cooled by large waves of water of the same temperature. This should be kept up from eight to fifteen minutes, according to the reaction of the patient. The baths should be repeated every two or three hours.

REFERENCE.—[1] "Amer. Journ. Med. Sci.," May, 1896.

DENTAL SURGERY. *Fielden Briggs, D.D.S., L.D.S., D.Sc.*

Cataphoric Medication.—Cataphoresis may be described as the electrical diffusion of fluids and substances through the soft and hard tissues. It is an electrical osmosis. Though slight electrolysis may co-exist, yet cataphoresis has no connection with it, and its effects are independent.

If the tissue or skin be made a positive pole and some distant part the negative, a medicamental fluid placed at the positive electrode will have a tendency to flow with the current, and be driven through the body towards the negative pole. To prove this let the electrodes be placed upon a piece of meat at a distance apart from each other; if the positive pole be tipped with copper, a deep stain of oxychloride of copper will be found in a few minutes at the positive pole, in the act of being forced through the meat to the negative electrode. Professor Morton tatooed his own arm by driving particles of lamp-black incorporated with salicylate of soda into it, using the positive electrode.

These facts open up a wide field for the investigation of its applicability and usefulness. After washing the back of my hand, (1,) I placed the positive electrode upon it, and holding the negative in my hand, I then applied a current of 3 milliampères 20 volts for twelve minutes. No anæsthesia resulted; (2,) I placed a 20 per cent. solution of cocaine hydrochlorate on cotton on the back of the hand at the same place as before and allowed it to remain for twelve minutes without result; (3,) Placing the positive electrode over the cocaine and holding the negative inside the other hand, I applied the current, and in a few minutes the part was so benumbed that I was able to thrust in a needle a quarter of an inch deep. Anæsthesia cataphorically produced had occurred in the last instance.

A word about the apparatus required is necessary. A continuous current up to about 40 volts must be obtained by using either thirty-two Leclanché cells, accumulators, a dry battery, or street current. If the street current is an alternating one, it must be transformed into a continuous one. Motors may be procured for this purpose. A rheostat capable of dealing with minute currents is also

required, and here, let me say, that most of the ordinary rheostats are useless for dental purposes, though they may be used for the skin and

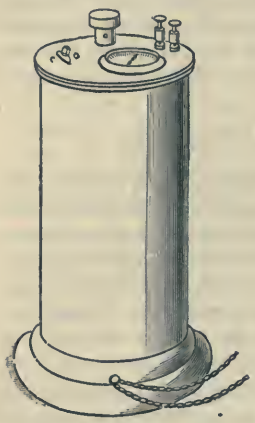
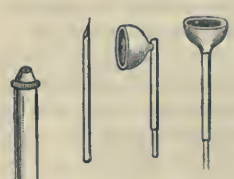


Fig. 12.—Fractional volt selector.

Fig. 13.—Double rubber-cup positive electrode.

Fig. 14.—Negative sponge electrode.

mucous membrane. In medical or surgical practice, applications of from 1 to 500 milliampères are needed; but in dental operations only $\frac{1}{20}$ of 1 milliampère to 3 or 4 milliampères are used, and for this reason an instrument is necessary capable of efficiently controlling such small currents. The nerve of a tooth being of an extraordinarily sensitive nature, the current must be minute, and its increase be in fractions of a volt to prevent giving pain. The Wheeler volt selector does all this, and seems to be the best rheostat for the purpose. A milliampère meter is necessary to record the quantity administered. This varies with the resistance of the tissues. In medical practice any current below 5 milliampères is useless in the majority of cases, but the dentine of a tooth is so sensitive to electricity that a fraction of a milliampère is easily felt passing through, and 5 milliampères are so high as to be rarely used. A variety of detachable electrodes will complete the outfit (see *Figs.* 12-18). More electrodes can be made as required to suit the case in hand.



15 16 17

Fig. 15.—Platinum needle.

Figs. 16, 17.—Rubber-cup detachable electrodes.

Fig. 18.—Handle for holding detachable points and metallic soluble bulbs.

Fig. 18.

Morton uses for cataphoric *medication* soluble positive electrodes of oxidisable metals. He screws on bulbs of either copper, zinc, silver, iron and so forth, according to the case to be treated, *e.g.*, passing a bulb of copper into the throat in pharyngitis. He mentions a case of extensive lupus which almost entirely disappeared by using cataphoric medication with soluble metallic electrodes. As a local anæsthetic for the skin or mucous membrane a watery solution of cocaine hydrochlorate, 4 to 8 per cent., is effective. An 8 per cent. solution of cocaine in guaiacol shortens the time. The skin should be previously washed to get out the oil, and a porous layer of thin felt or blotting paper saturated with the solution intercepted between it and the positive electrode, which latter consists of a flat piece of platinum as large as the surface to be anæsthetised. The negative sponge electrode can be held in the hand or placed anywhere on the body. Cataphorically driven into the tissues no toxic effects have been observed, such as often follow hypodermic injection of cocaine.

In dental practice I have found cataphoresis extremely successful. In a case of periodontitis the pain was entirely dissipated by the application of a 50 per cent. watery solution of iodine to the gum over the root of the tooth. A chronic alveolar swelling over the root of a tooth disappeared after three applications of potassium iodide in solution, allowing an interval of two days between each.

Sensitive dentine can be so obtunded that a tooth may be drilled without the slightest pain for such purposes as filling, and I have repeatedly taken out the exposed and living nerve without giving any pain.

The *modus operandi*, which will apply to all cases, briefly is as follows : The patient holds the sponge negative electrode, moistened with a 1 per cent. solution of sodium chloride, in the left hand. After applying the rubber-dam to the tooth, a ball of cotton is placed in the cavity saturated with a 30 per cent. solution of eucain hydrochlorate or a 15 or 20 per cent. solution of cocaine hydrochlorate in guaiacol, or in water. The positive platinum needle is placed upon the cotton. Into the circuit are introduced the volt selector and the milliampère meter. The current is now gradually turned on, beginning with an imperceptible amount and increasing very slowly, until the patient feels a slight burning sensation. When this occurs, *increase* must be at once stopped, until the anæsthetic having penetrated, all sensation of uneasiness passes away. The current can then be gradually increased until the tooth is absolutely numb. More solution must be added to the cotton from time to time, either by turning off the current and removing the cotton, or by moistening the cotton *in situ*

with a drop tube. I prefer the patient to himself turn on the current at the volt selector with the right hand; this ensures the current not being increased so as to produce pain. The amount necessary varies with individuals, from a ¼ to 2 milliampères being all that is required to anæsthetise a tooth sufficiently to cut it to pieces, or to extract a live pulp.

The chief objection is the time consumed, from seven minutes to sometimes as long as fifty minutes being required; though some of the time is saved by being able to operate at greater speed because painlessly. Further investigation and experiment may probably reduce this time.

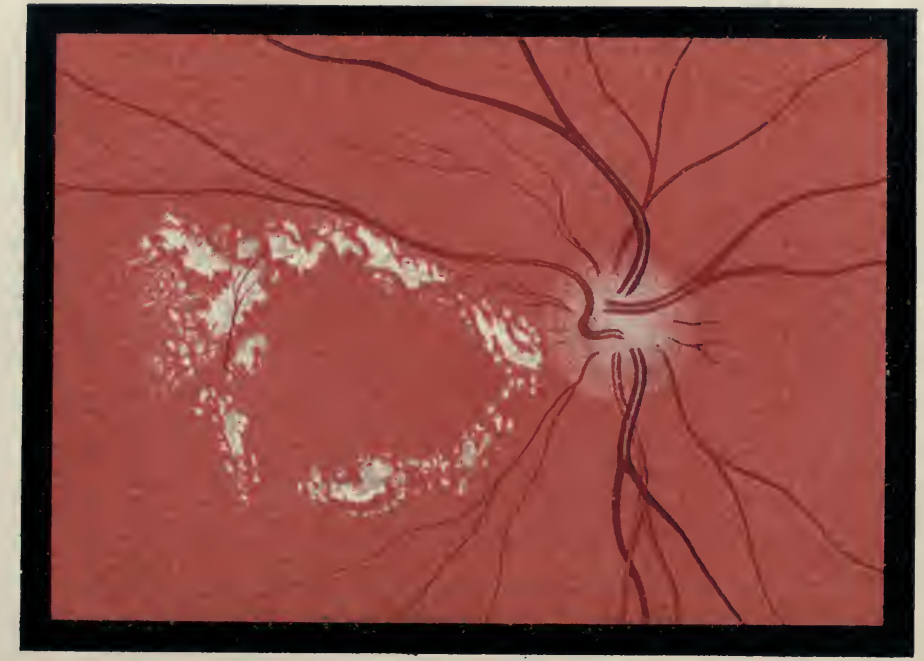
In extraction of teeth a double cup, tong-shaped electrode, positive on each side of the tooth, is used. But cataphoric anæsthesia does not appear to be invariably successful for extraction, in many cases only partial effect being produced, and in some none at all. This may be accounted for by the difficulty of adapting the electrode to fit all round the tooth. At the same time anæsthesia can be obtained sufficiently to trephine painlessly a new socket through a toothless gum for the purpose of implanting another tooth, and it is preferred by the patient to a hypodermic injection. A discoloured tooth may be beautifully bleached by cataphorically using 20 per cent. solution of peroxide of hydrogen, care being taken to seal up the root canal with gutta percha to prevent its being driven through the apex. There seems to be a future of usefulness in minor surgery for cataphoresis, and in dental surgery it is already proving a great boon.

DIABETES INSIPIDUS. *Prof. R. Saundby, M.D., F.R.C.P.*

Diabetes Insipidus is in many cases a condition which is attended by no derangement of the general health, as in the remarkable family whose history was recorded some years ago by Weil, in which no less than twenty individuals were affected, yet all were well developed and performed their military service; one lived to eighty-three, another to seventy-four, and two were living at the ages of sixty-seven and seventy-three respectively. Yet in other cases the disease kills, and it does this by destroying the kidneys which undergo cystic degeneration and become insufficient; the urea excretion, in spite of the polyuria, falls to less than half the normal amount, and the patient dies comatose.[1] It is therefore of importance to observe the urea excretion in order to form a proper prognosis.

The treatment of this disease is very uncertain; it gets well sometimes after an acute illness, such as acute rheumatism or measles, and many spontaneous cures have been recorded. **Valerian,** in drachm

PLATE III.



Retinitis centralis punctata diabetica.

doses of the extract, or valerianate of zinc, up to 15 grains, three times a day, is one of the most highly recommended remedies. Lately Clarke [2] and Fish [3] have reported improvement following the administration of **Supra-renal Gland**, either fresh or in tabloids, but in no case was a cure obtained.

REFERENCES.—[1] "Practitioner," 1895, vol. liv., p. 39; [2] "Brit. Med. Journ.," 1895; i., p. 1086; [3] "Ibid.," 1896, i. p. 1386.

DIABETES MELLITUS. *Prof. R. Saundby, M.D., F.R.C.P.*

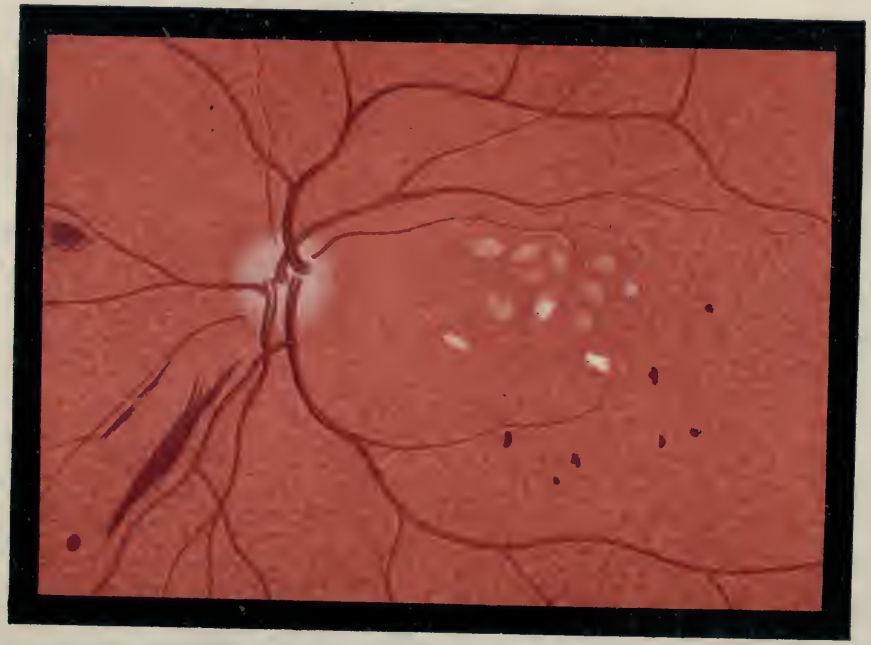
No one who has investigated the statistics of diabetes doubts that it is increasing steadily and rapidly in all the great cities of Europe. This is much greater than could be accounted for by better diagnosis or more careful registration. In Paris the diabetic mortality per 100,000 of population has risen from an average of 8 in the five years ending 1885 to an average of 13 in the five years ending 1893; in Copenhagen [1] it has risen from 5 in the 1870 decade to 8 in the last ten years; in England and Wales the mortality has increased in the last fifteen years 70 per cent., even after allowing for the growth of population.

In a careful analysis of the incidence of this increased mortality in Paris, Dr. Bertillon has shown that while true of all parts of the city it is much more marked in the rich quarters, some of these reaching as high as 20 deaths per 100,000 inhabitants, the average being over 16, while in some of the poorer parts it is only 7, the average being a little over 9. What the precise cause may be of this great increase it is not easy to define with accuracy, but it is undoubtedly to be found in the conditions of modern civilized life. [2] Diabetes is undoubtedly rare among people who lead a laborious life in the open air, while it prevails chiefly with those who spend most of their time in sedentary indoor occupations. Its increase runs *pari passu* with that of insanity, for although diabetes and insanity rarely co-exist in the same person insanity and other nervous troubles occur very commonly in diabetic families. A very remarkable instance of this has been recorded by Mr. Given [3]: A diabetic mother had a daughter who was a drunkard; this daughter married the son of an asthmatic, and of their nine children two were diabetic, one was epileptic and a chronic alcoholic, while a fourth was hemiplegic. In the course of a discussion at the New York Academy of Medicine Dr. A. H. Smith [4] mentioned the prevalence of diabetes amongst locomotive drivers, and stated that it was shown by their insurance records to be seven times (!) that of the ordinary population. On enquiry it does not appear that the great railway companies in this country have had

their attention drawn to the matter, but such authorities as Mr. Herbert Page and Dr. Bond are not aware of any marked liability among this class. The figures of the L. & N.W.R. Co., kindly supplied by Mr. Herbert Page, indicate that the mortality of engine drivers from diabetes, so far as it is possible to compare them with the general population at about the same age, is somewhat excessive. I give the figures for what they are worth: Mortality from diabetes per 10,000 deaths—locomotive drivers, 150; general population between the ages of thirty and sixty years, 80. Dr. Smith attributes this prevalence to: (1,) The jarring to which they are exposed; (2,) The mental strain under which they work; and (3,) The changes of temperature they have to endure. Further information on this subject is much wanted.

Another extremely interesting question is, whether diabetes can be communicated from the sick to the healthy? Such a suggestion may seem ridiculous to those who have seen little of diabetes, but it has originated in the clinical observation that husband and wife are not very uncommonly both affected with diabetes. Teissier[5] brought some very remarkable histories before the Medical Congress at Lyons last year; in one of these a laundress became diabetic after washing the linen of a man and his little daughter who were both suffering from diabetes; in another the mother first became diabetic, then the son, next the cook who had washed pockethandkerchiefs for her master, and lastly a sewing woman who was in the habit of going to the house to mend linen and assist the cook. Offler and Külz[6] having analysed the notes of nine hundred cases of diabetes, left by the late Prof. E. Külz, they found ten examples of conjugal diabetes, but in all but one instance they believe there was sufficient evidence of predisposing conditions on both sides to make the theory of transmission superfluous. Yet it may be asked, is the existence of such a predisposing cause a sufficient explanation? Is it enough that a man has had syphilis twenty years before, or had a relation affected with some nervous disease, or drinks too much alcohol to account for the supervention of diabetes? Other writers explain these cases as simple coincidences, but they are too numerous for that answer to be satisfactory. A more plausible view is that married people are exposed to identical external conditions producing similar results, but in some of the cases quoted the lives of the husband and wife were by no means alike, as in one reported by Marie, where the husband was an interpreter, whose occupation took him very much away from home. The theory of microbial origin of diabetes is not inconceivable since Charrin succeeded in inducing pancreatic diabetes by injecting

PLATE IV.



Retinitis hæmorrhagica diabetica.

micro-organisms into the pancreatic duct, and as the transmissibility of every disease of microbial origin must be admitted to be possible, we are not justified in taking up too dogmatic an attitude in the face of this new suggestion.

Occasionally we meet with sugar in the urine of persons who have no other symptoms of diabetes, in whom the glycosuria is merely transient, and is apparently the result of the ingestion of more sugar or sugar forming material than they are able to assimilate. Von Noorden[7] believes that this is a premonitory sign of diabetes, and he proposes to test all gouty and obese patients by dosing them with grape sugar. He has performed this experiment on fifteen persons, and says that four showed glycosuria, of whom two have since become diabetic. The result is interesting but scarcely of practical value, unless it can be shown that the prognostic fails less often than in half the cases. We should much like to know the subsequent history of cases of transient glycosuria, and it is to be desired that those who are able to follow them up will publish the result.

The retinal affections of diabetes are little known, except to specialists. At first confounded with those of Bright's disease, they are now admitted to have distinct features of their own, but they are never met with in young diabetics, and very often albuminuria, as well as glycosuria, is present. Two types have been distinguished: (1,) *Retinitis centralis punctata diabetica* (*Plate III*), in which there is a characteristic inflammation of the central portion of the retina, causing small bright spots arranged in groups, and often accompanied by hæmorrhages; and (2,) *Retinitis hæmorrhagica diabetica* (*Plate IV*), in which retinal hæmorrhages occur, followed by inflammatory and degenerative changes. It cannot be said that these types are very well defined, especially as mixed forms are met with presenting the characters of both, but they are sufficiently different from retinitis albuminurica to admit of no confusion in well marked cases. The chief points of difference are: (1,) That the patches are irregularly distributed over the retina, not specially near the macula, and that they are met with on the nasal as well as on the temporal side of the disc; (2,) That they are never fan-shaped; (3,) That they are never associated with papillitis or diffuse retinitis; (4,) That the hæmorrhages are as a rule punctiform and not striated; and lastly (5,) That hæmorrhages into the vitreous are common.

A good deal has been written of late about the liver in diabetes. It used to be said that it was as a rule healthy, but this is a great mistake; on the contrary it is generally enlarged from interstitial hepatitis. Special interest attaches to the form of pigmentary

cirrhosis of the liver, associated with pigmentation of the face, limbs, and genitals, which has been described as *diabéte bronzé*. Pierre Marie[8] believes that this is not a complication of diabetes but a distinct morbid entity; if this be true, it would suggest that the interstitial hepatitis, so constantly met with, plays a more important part in the pathogenesis of diabetes than has hitherto been supposed.

All practitioners are frequently confronted with the difficulty of determining whether a very slight reduction of Trommer's test indicates sugar or some other reducing agent. Sir William Roberts[9] recommends filtering the urine three or four times through animal charcoal and then testing again, as he believes that this filtration removes all the other reducing substances, but this is not certain. McDonald[10] advises the following method: Half a drachm of urine, half a drachm of saturated picric acid solution, and quarter of a drachm of liq. potassæ are put into a long narrow test tube, which is then filled to two thirds with distilled water, and the whole heated just short of boiling; then the upper layer is boiled for two minutes. He says at first the red colour disappears in great part (kreatin reaction) but if sugar is present it darkens again as boiling is continued, which never happens in normal urine. Neither of these plans seem in practice to be quite trustworthy, and it is better to ferment the urine in a test tube inverted over mercury, when, if sugar is present, a bubble of CO_2 will be formed. It is necessary to wash the yeast before using it. The phenyl-hydrazin test is also most trustworthy for this purpose if carried out in accordance with the directions of its inventor, Von Jaksch, but it is now in such general use that it need not be described here.

The past year has, like its predecessors, seen the announcement of several new remedies for diabetes, which our duty requires us to mention, although past experience affords little ground for hope that they will prove of greater value than the outcome of former years.

Karl Grube[11] recommends the use of a liqueur glass of **Alcoholic Extract of Pancreas** in the digestive troubles of diabetic patients. He prepares it by digesting chopped up ox's pancreas in half a litre of alcohol at 15°, for two days; this is then filtered and some good brandy added to cover the taste. The dose, as above described, is taken after each meal.

Yeast, after having fallen for some years into disuse, is again recommended by Cassaet[12]; 2 ounces to be taken at meal times.

Robin,[13] under the name of the alternative treatment of diabetes, employs a somewhat complicated method in which **Antipyrin, Alkalies, Cod-liver Oil, Quinine, Arsenic, Lithia, Codeine, Opium, Belladonna,**

Potassium Bromide, Valerian, Potassium Tartrate and the **Glycero-Phosphates of Magnesium** and **Calcium**, has each a place.

Lepine[14] has produced a glycolytic ferment from the **Diastase of Malt,** and has had some not very striking results from its use.

Ringer[15] has suggested a method of freeing **Milk** from its sugar and salts, but it is at least doubtful if this is desirable, as diabetic patients can assimilate a reasonable amount of milk sugar. In fact the general tendency of experienced clinicians is towards the allowance of a certain amount of **Carbohydrate Food**, although this must be rigorously determined for each case.

Stern[16] recommends the **Pea-nut** as a food for diabetes, but there are plenty of nuts to be had, all having the same advantage, namely, that they contain little or no starch, and disadvantage, namely, that they are very indigestible; cakes made from them afford only a sorry substitute for ordinary bread.

REFERENCES.—[1] "Revue de médecine," 1896, 521; [2] Saundby, "Lectures on Renal and Urinary Diseases," 1896, p 243 *et. seq.*; [3] "Lancet," 1896, i. p. 1425; [4] "Medical Week," 1896, p, 189; [5] Ibid, p. 13; [6] "Berlin klin. Woch.," pp. 583 and 612; [7] "Centrlbl. f. in. Med.," May 25, 1895; [8] "Brit. Med. Journ.," 1896, i p. 206; [9] "Practitioner," 1896, p. 11; [10] "Lancet," 1896, ii, p. 814; [11] "Medical Week," 1895, p. 107; [12] "Lancet," 1895, ii, p. 685; [13] "Bull. de l'Acad. de méd.," 1895, No. 25; [14] "Medical Week," 1895, p. 229; [15] "Brit. Med. Journ.," 1895, ii. p. 1412; [16] "Medical News," vol. 66, p. 23.

DIARRHŒA AND INDIGESTION (in Children).

Henry Dwight Chapin, M.D., New York.

Dr. Irving M. Snow[1] considers the symptomatology and treatment of infantile diarrhœa in connection with cases treated at the Buffalo Fresh Air Mission. Practically the only medicines producing positive effects were **Opium** and **Bismuth Subnitrate**. The deodorized tincture of opium was used in small doses, frequently repeated. Opiates should be cautiously given to children with a high temperature, or to wasted apathetic infants. Bismuth was prescribed in massive doses, given at short intervals. The vegetable and mineral astringents, and the so-called intestinal antiseptics, were found to be without utility. Calomel and salicylate of sodium were frequently useful. Fever, when present, was reduced in three ways: (1,) By sponging with cold water, frequently repeated if the temperature rose again; (2,) The cold baths were useful in acute ileo-colitis, or in mycotic diarrhœas. The patients were placed in water at 95° F., and the bath was then lowered to 85° or 80°. The patient was removed from the bath when the temperature had dropped to 101·5; (3,) Cold irrigations. Children with high rectal

temperature collapsed; with cold extremities, were stimulated hypodermically. The trunk and extremities were wrapped in hot flannels, and cool irrigation, 80° to 95°, was given. The water was hot when it returned from the bowels. Strophanthus, strychnia, and caffein, were frequently employed, and strong coffee when an apathetic condition seemed to contra-indicate alcohol.

Dr. W. D. Booker[2] advises in diet that the first thing to do is to stop everything at the time the sickness occurs. Rice water or oatmeal water are substituted for milk, and **Calomel** is given as a purgative. To a child six months old, ⅙ of a grain should be given every hour until a grain or more is taken. Calomel acts somewhat as an antiseptic. Egg water is frequently administered. The white of the egg should be beaten up, and allowed to stand for a few hours in a cold place. Then pour the clear part off from the bottom, and a teaspoonful of this clear white of the egg can be dissolved in three or four teaspoonfuls of clear water, and be given as a substitute for the cereal waters.

Dr. Schild[3] has studied the appearance of bacteria in the intestines of the newly-born before feeding is begun. After examining fifty newly-born infants, he finds that the contents of the rectum are sterile immediately after birth. The first infection takes place independently of the administration of liquid. The time of the infection takes place about four hours after birth. Entrance of the bacteria is effected through the mouth and anus. The source of the bacteria is from the air and water used for bathing, rarely from the clothing or the vagina of the mother. In children, as well as in adults, infection is possible by means of the anus.

Dr. Strauss[4] has treated infantile diarrhœa with **Tannigen**. The results were excellent in the cases of chronic diarrhœa, all of which were children under one year of age. Diarrhœa of several months' standing, which had resisted other remedies in connection with a strict diet, were relieved with remarkable rapidity. A knife-pointful three times daily was administered, the size of which was varied according to the age of the child.

Dr. Moncorvo[5] has likewise employed tannigen. When administered, it has no action till it reaches the duodenum, where it is decomposed, and liberates tannin in, so to speak, the nascent condition. The author has used this drug upon twenty-one children, whose ages ranged between one month and six years. All suffered from intractable diarrhœa, usually malarial in origin, and in many cases complicated by hereditary syphilis or tuberculosis. It was easily administered in julep, and invariably well borne.

Dr. Escherich[6] describes tannigen as a yellowish-grey powder,

odourless and tasteless, practically insoluble in water and in diluted acids, but soluble in alkaline solutions and in dilute solutions of phosphates and carbonates, as well as in alcohol.

The action of tannigen varies widely, according to the locality, and the kind of diseased action that is going on. Escherich holds that the drug is positively contra-indicated in pronounced inflammatory diseases of the intestine accompanied by effusion of serum into it. In cases also of the secretion of a thin, serous fluid, such as results from acute irritation of the upper part of the intestinal canal, it is of little use. It is particularly the lower portion of the intestinal tube that reacts well to tannigen ; the amount of mucus is diminished at once, and its over-production does not recur unless the use of the remedy is discontinued. As a consequence, not only are the irritated state of the mucous membrane and the particular cause of the disease overcome, but the loss of nitrogenous material and the heightened peristalsis are reduced, and the absorption of water and nutrient matter in the large intestine is promoted.

But this is not all that tannigen accomplishes. In spite of the paucity of experimental evidence, it can hardly be denied that tannin has a certain disinfecting power by impeding bacterial development ; as with alkaloids, so with numerous bacterial poisons, such as toxalbumins, it unites to form insoluble and, consequently, non-poisonous compounds, as is shown in Cantani's treatment of cholera. All these valuable attributes unite to accomplish the gratifying effects of the use of tannigen in subacute and chronic intestinal catarrh in children. Large doses must be given—3 grains for children less than a year and a half old, and 7 grains for older children, from four to six times a day. For the most part, Escherich gives the powder mixed with the child's food. He has never known tannigen to derange the appetite or the digestion, or to produce any untoward after-effect. It is not uncommon, however, for it to colour the stools black.

Dr. W. S. Fenwick[7] advises **Resorcin** in large doses in cases of infantile diarrhœa arising from fermentative processes in the stomach and intestine. It is probably on account of insufficient dosage that the value of the remedy has been so much overlooked. The drug produces no ill effects in an adult unless the dose exceeds a drachm, and 3 grains can be given every four hours to infants only a few weeks old without the least ill-effect. The first effect of the drug is usually noticeable after the third or fourth dose, when the motions decrease in frequency and in amount, the dejecta at the same time acquiring a more natural appearance, and losing their excessive fœtor.

Dr. Dauchez[8] recommends **Enteroclysis**, consisting of large injec-

tions of weak antiseptic solutions, in chronic mucous diarrhœa. The child is placed in the horizontal position, with the left hip a little raised, so that the cæcum is in a dependent position. A large catheter or œsophageal sound is introduced as far as possible, connected with a reservoir about eight inches above the level of the patient. The fluid enters very slowly, but Ojss to Oij may be introduced in a quarter of an hour. Sodium hyposulphite, 5 per cent.; tincture of benzoin, 15 per cent., or boric acid, 4 per cent., may be used.

Dr. Reinach[9] employs injections of **Cows' Serum** in cholera infantum. The dose is from 10 to 20 cubic centimètres injected subcutaneously. The effect of the injections manifested itself in from six to eight hours after the administration of the serum, and from that time the temperature gradually rose, the extremities became warm, the cyanosis gave place to a rosy tint of the skin, and the diarrhœa was arrested. In some cases a second injection was necessary in order to maintain the good results. The author states that, from a nutritive point of view, 20 cubic centimètres of assimilable serum are equivalent to 5 ounces of cow's milk, or to 1½ ounces of the mother's milk. (In a series of similar experiments in which sterilized horse serum was used, the editor obtained bad results. His studies in this direction two years ago convinced him of the inutility and danger of this method of treatment.—H. D. C.)

REFERENCES.—[1] "Buffalo Med. Journ.," vol. xxxv, No. 6, 1896; [2] "Journ. Amer. Med. Assoc.," vol. xxv, No. 15, 1895; [3] "Zeitschrift f. Hygiene und Infektionskrank.," Bd. xix, S. 113, 1895; [4] "Berliner klin. Woch.," No. 3, 1896; [5] "Bull. de l'Acad. de méd.," Dec. 3, 1895; [6] "Therap. Monats.," March 9, 1896; [7] "Brit. Med. Journ.," Dec. 21, 1895; [8] "Rev. des mal. de l'enf.," May, 1896; [9] "Munch. med. Woch.," No. 18, 1896.

DIARRHŒA (Infantile, in Australia).

J. W. Springthorpe, M.D., M.R.C.P., Australia.

Stawell points out that in Melbourne, as in many American cities, diarrhœa becomes epidemic only when the mean temperature has reached an elevation of 60° F., and no other atmospheric condition can be shown to exert any appreciable influence upon the disease. The prevalence of summer diarrhœa exists only among artificially fed infants, and its immediate cause is certainly those putrefactive or fermentative changes which take place so readily in liquid foods, at a temperature of or above 60° F. It would be useful to class cases of summer diarrhœa under the heading of "Milk Infection," in order to emphasize the etiology. A vigorous protest must be raised against the term "Marasmus," since it is most misleadingly used to indicate some

definite disease that manifests itself in a strong predisposition to diarrhœal disease, and thus attention is withdrawn from the chief cause of the trouble, viz., infected food.

The pathological anatomy of summer diarrhœa shows that the chief incidence of the inflammation is on the colon ; the nature of the inflammatory changes varies ; in advanced cases there is marked follicular ulceration. In certain acute cases the ileum is also largely involved. Organic changes in the stomach have not been detected *post mortem.* Ileo-colitis is a more correct name for the condition than gastro-enteritis.

The condition of the vessels of the brain and its membranes varies somewhat according to the mode of death, but nothing has been found to justify the view that fatal cases are due to what is called "congestion of the brain"; in most cases there is marked evidence of anæmia of the brain.

Of all therapeutic measures, thorough and frequent **Irrigation** of the large intestine is the most satisfactory ; the irrigating fluid usually employed is a weak solution of **Borax.** The vomiting associated with the disease, is best treated by thorough **Lavage.** For the condition known as "spurious hydrocephalus," free **Alcoholic Stimulation** must be employed.

REFERENCE.—"Australian Medical Journal," Feb. and March, 1895.

DIGESTION (Disorders of). (See also "Stomach, Disorders of.")

W. Soltau Fenwick, M.D., M.R.C.P.

PHYSIOLOGY : *The influence of Alcohol upon Digestion.*—Chittenden and Mendel[1] contribute an elaborate essay upon this subject, of which the following is a brief summary : Pure ethyl alcohol, the active agent in all so-called alcoholic liquors, when present in small amount—say 1 or 2 per cent. of absolute alcohol, equal approximately to 2 to 4 per cent. of proof spirit—has little or no action upon the digestive power of the gastric juice. There is, indeed, a slight tendency for such amounts of alcohol to increase somewhat the proteolytic power of the enzyme—in other words, the digestive power on proteid foods may be slightly increased. As the percentage of alcohol is raised, retardation or inhibition of proteolytic action becomes pronounced, although not very marked until the digesting mixture contains 5 to 10 per cent. or more of absolute alcohol. With 15 to 18 per cent. of absolute alcohol, digestive action may be reduced one-quarter or even one-third. Especially important is the fact that the extent of retardation by a given percentage of alcohol varies greatly with the strength or activity of the gastric juice and with the digestibility of

the proteid material. Everything else being equal, the greater the strength or digestive power of the gastric juice the greater the inhibitory action of a given amount of absolute alcohol. It is, therefore, impossible to make a general specific statement regarding the action of given percentages of alcohol under all conditions.

On the proteolytic action of the pancreatic juice, absolute alcohol exercises a more marked influence, the presence of even 2 or 3 per cent. being sufficient to produce a distinct retardation of digestive action.

Malt liquors in small quantities are without any marked influence on the digestive power of the gastric or pancreatic digestion.

Gastric Acidity in its relation to Acidity of the Urine.—The variations in the acidity of the urine in different diseases of the stomach has been the subject of an extensive research by Mathieu and Tréhieux.[2] The following are the results of their observations conducted upon four hundred separate examinations of the urine. There is a constant connection between the acidity of the gastric juice and that of the urine. The acidity of the stomach, produced either by secretion or by fermentation of the food, causes an increase both in the proportion and in the absolute quantity of acid eliminated by the urine during the process of digestion. In the normal state the acidity of the urine is perceptibly lowered during the first few hours after taking food. It becomes progressively greater afterwards. The diminution of the acidity may be preceded by a temporary increase for the first hour after a meal, as if a certain quantity of acid was produced and then rapidly eliminated. It happens very often that there is a nearly absolute parallelism between the relative acidity and the actual quantity of acid thrown off. This parallelism does not exist if polyuria occurs after the meal. Should anything happen to reduce the amount of gastric acidity (lavage, vomiting, etc.), a marked diminution in the acidity of the urine at once takes place. In some instances the urine may even become alkaline. The ingestion of milk is followed by an increase in the amount of acid eliminated by the kidneys, owing to the rapid formation of lactic acid in the stomach and its diuretic effect when absorbed into the general circulation.

The effects of sleep upon the functions of the stomach have been investigated by Schule,[3] who finds that sleep taken soon after a meal has the effect of weakening the motor functions of the organ while at the same time it tends to increase the acidity of the gastric juice.

Gottlieb[4] has made some interesting experiments upon the influence of mustard and pepper on the secretion of the pancreatic juice. The experiments were conducted upon rabbits, a cannula being first

inserted into the pancreatic duct and the condiments afterwards introduced into the stomach. The presence of either of these substances in the stomach was found to excite the pancreas to pour forth three or four times its ordinary quantity of secretion, and the fluid, although more watery than normal, exhibited the usual digestive properties when brought into contact with different kinds of food-stuffs.

Strauss[5] discusses the appearance of sulphuretted hydrogen and indol in the stomach as the result of bacterial decomposition of albuminoids. In one of the cases investigated the gas in a dilated stomach appeared to be connected with the presence of the B. coli commune. An indol-forming body as well as indol was also present. The bacterium, when separated and cultivated, was found to produce sulphuretted hydrogen. In this case free hydrochloric acid was absent from the gastric contents, and no lactic acid could be detected.

SYMPTOMATOLOGY.—Under the term "Gastro-succorrhœa continua chronica," Einhorn[6] has described a disorder which is characterised by a constant secretion of gastric juice. The complaint is comparatively rare, since, during the course of seven years, only six instances had come under the author's notice. Men are more often affected than women, and in many cases some form of neurosis coexists with the gastric disturbance. The vomiting is most common after breakfast, and the ejecta are always acid. The appetite is increased, and thirst is a marked feature of the case. Repeated examinations of the stomach in a fasting condition are necessary before a diagnosis can be established. The complaint can be distinguished from stenosis of the pylorus by the fact that in the latter disease particles of food can always be detected in the contents of the stomach, while in the functional disorder digestion is completed in the ordinary manner. The prognosis is generally good, though relapses are not uncommon. The best treatment to adopt is to strictly limit the quantity of fluid taken with the meals, and to practise **Lavage** in the fasting condition, immediately after which the organ should be sprayed with a 1½ per cent. solution of **Nitrate of Silver.**

PATHOLOGY.—Einhorn[7] contributes an interesting paper upon the state of the gastric mucosa in secretory disorders of the stomach. In certain diseases of the stomach small pieces of the mucous membrane become spontaneously detached, and can be recognized in the washings of the organ. In cases of excessive acidity of the gastric juice, these pieces of tissue usually exhibit signs of proliferation of the gastric glands, while in those where the secretion is diminished, the glands often appear in an atrophic condition.

TREATMENT.—Houchard[8] ascribes to **Hydrochloric Acid** two important properties—eupeptic and antiseptic. As a digestive it supplies to the gastric juice the acid which is wanting, and its administration is therefore indicated in all conditions in which hydrochloric acid is diminished or absent, as in cases of delayed digestion, subacidity, chronic gastritis, cancer of the stomach, continued pyrexia, phthisis, chlorosis and neurasthenia. Its use is contraindicated in all acute gastric affections, hyperacidity, hypersecretion, ulceration, and hysterical dyspepsia. As an antiseptic it is chiefly of value in dilatation of the stomach, and in gastric disorders characterised by fermentation and acidity, and should then be given two or three hours after the meals.

Linossier[9] considers that the dose of **Bicarbonate of Sodium** given for deficient secretion of hydrochloric acid should be carefully proportioned to the deficiency, and vary from 8 to 30 grains. Too small a dose will fail in effect, and too large a one will neutralise the acid secreted. Small doses should be given fifteen minutes, and large ones sixty minutes before a meal, or, rather at such time that the meal coincides with the feeling of hunger which follows after a dose. The immediate effect is to produce a feeling of satiety, and shortly afterwards a desire for food. In hyperacidity small repeated doses may be given every half-hour during digestion, beginning before the usual commencement of the pain, and continuing until digestion is finished. The sodic salt may advantageously be combined with calcined magnesia and carbonate of bismuth.

Tournier[10] reports the case of a woman suffering from hyperacidity, who for more than a month took between 2 and 2½ ounces of bicarbonate of soda daily in divided doses. During the treatment there was no constitutional disturbance of any kind noted, and the patient steadily increased in weight. The urine presented a feeble alkaline reaction, and the intestinal functions were normal.

Mathieu[11] relates the case of a man suffering from acid dyspepsia for whom he had prescribed the **Subnitrate of Bismuth** in doses of 225 grains in the morning and 75 grains at night. At the end of two months the patient had taken twenty-four thousand grains of the salt without its having produced any bad results, beyond slight constipation and a few patches of pigmentation in the skin. Both these symptoms disappeared as soon as the drug was discontinued.

Pugliese[12] states that **Atropine** is an excellent remedy for the correction of hypersecretion of the gastric juice. In four cases of this disease which came under his care, hypodermic injections of atropine were invariably followed by a notable decrease in the quantity

of hydrochloric acid in the gastric juice, as ascertained by chemical analysis. In two instances all the morbid phenomena subsided within two months under the use of daily doses of ½ to 1 milligramme of the neutral sulphate of atropine.

Sawyer[13] recommends the administration of **Glycerine** in cases of painful gastric digestion, especially where there is catarrh of the mucous membrane of the stomach. The drug is most advantageously given in doses of 1 to 2 drachms combined with some simple bitter between the meals.

Somatose is recommended by Gerdes and Susewind[14] in the treatment of gastroenteritis and irritative affections of the digestive tract. The drug can be given in teaspoonful doses three or four times a day, and when added to ordinary articles of diet tends to improve the appetite and allay unpleasant symptoms arising during the process of digestion.

Stewart[15] has employed **Ichthyol** with success in certain cases of hypersecretion. He administers the drug through a tube, in doses of 1 drachm, combined with an equal quantity of glycerine dissolved in about 8 ounces of water, the stomach having been previously cleansed with dilute soda solution.

In the treatment of dyspepsia, dependent upon deficient secretion of the gastric juice, Stewart[16] speaks strongly in favour of **Papain** in doses of 5 to 10 grains given in a liquid form immediately after the meals. The results obtained from the use of this artificial digestive are far more favourable than those which accrue from the employment of pepsine and hydrochloric acid.

Grote[17] has examined the gastric contents, motility of the stomach, etc., in a number of cases of gastric disease. The papain was given for long periods of time, in doses of 0·5 to 1 g. after meals. In two out of three cases of acute dyspepsia there was but little alteration in the motility, gastric secretion, or condition of the ingesta, but in the remaining case the functions of the stomach showed improvement. In three cases of ulcer the papain treatment had to be discontinued on account of the increase in the pain. In two of these cases no qualitative or quantitative change was noted in the ingesta, but an active secretion of gastric juice was produced in the third case. In two cases of motor insufficiency with hypersecretion a further increase in the gastric secretion was noted. In one of two cases of gastric carcinoma an improvement was noted, but papain here appears also to exercise an irritant action. In two cases of secondary dyspepsia, improvement was noted in the first case. The author, in conclusion, warns against the use of papain in ulcerative processes and in

hyperacidity; in other cases of sub- or anacidity the drug may be legitimately tried.

REFERENCES.—[1]"Therap. Gaz.," July 15, 1896; [2]"Archives générales de méd.," 1895; [3]"La Med. modern," Jan. 15, 1896; [4]"Therap. Gaz.," Feb. 15, 1896; [5]"Berlin. klin. Woch.," July 4, 1896; [6]"Boston Med. and Surg. Journ.," Jan. 22, 1896; [7]"Med. News," Jan., 1891; [8]"Journ. des Praticiens," 1895; [9]Ibid., April 11, 1896; [10]"New York Med. Journ.," April 25, 1896; [11]"Mercredi médicale," Dec. 11, 1895; [12]"Indian Lancet," July 6, 1896; [13]"New York Med. Journ.," July 25, 1896; [14]"Deut. Aerzt. Zeit.," Oct. 13, 1895; [15]"Philadlphia Polyclinic," July 11, 1896; [16]Ibid., v., 1896; [17]"Deut. med. Woch.," July 23, 1896.

DIPHTHERIA. *Henry Dwight Chapin, M.D., New York.*

Dr. Wm. G. Bissell[1] gives some experience in the bacteriology of diphtheria derived from laboratory experience. Out of one thousand and forty cultures which did not reveal the Klebs-Loeffler bacillus, the organisms found, named in order of the frequency of their occurrence, were as follows: No. 1, Staphylococci, the most numerous being the aureus; No. 2, Cocci without any definite arrangement; No. 3, Streptococci; No. 4, Bacilli other than the Klebs-Loeffler, and deserving of special mention; a very large strepto-bacillus was of frequent occurrence; No. 5, The thrush fungus; No. 6, Diplococci. The greatest mortality in cases of diphtheria appears to be produced by a mixed infection; that is, the specific germ is usually associated with either the streptococcus or the staphylococcus, the former organism being of the greater frequency. It seems also to be a fact that when both the staphylococcus and the streptococcus are associated in the same culture with the diphtheria bacillus, that the case is a mild one.

Dr. Henry Jackson[2] states that for the past six years **Gavage**, or forced feeding, has been employed in the diphtheria wards of the Boston City hospital in the treatment of such cases as could not otherwise be properly nourished. Most of the cases were patients who had laryngeal diphtheria, in whom the O'Dwyer intubation tube had been inserted. In every case where intubation is necessary, the child is fed by liquid nourishment, practically milk, introduced by a catheter passed into the stomach through the nose.

Dr. T. B. Hill[3] suggests the **Dead-Air** treatment of nasal diphtheria. The method consists in striving to limit the production of the toxin in this region by shutting off the necessary current of air. This is accomplished by plugging the anterior nares with cotton.

Dr. H. W. Berg[4] considers pneumonia as a complication of diphtheria in children. The pulmonary complications of diphtheria may be divided into four varieties: (1,) Congestion of the lung; (2,) Broncho-

pneumonia; (3,) Lobar pneumonia; and (4,) Gangrene of the lung. Broncho-pneumonia is most frequently found as a complication of diphtheria in children—indeed, some authorities doubt if any other form of pneumonia occurs in these young subjects. The autopsies at the Willard Parker hospital during the past year do not show any lobar pneumonias complicating diphtheria.

In cases of gangrene of the lung, in addition to the usual signs and symptoms of broncho-pneumonia, there is an exceedingly fœtid odour. This complication may be the result of large infarctions in the lung, which are sometimes found in diphtheria.

The differentiation of these four varieties is important from a prognostic standpoint. Pneumonias complicating true diphtheria are found to be the result of a mixed injection rather than of the Loeffler bacillus. Recent experimentation and observation justify the conclusions: (1,) That streptococci and Loeffler bacilli, with or without other cocci, are the bacteriological cause of the pneumonia complicating diphtheria; and (2,) That mixed infection not only causes this and other complications, but increases markedly the virulence of the diphtheria bacillus.

TREATMENT.—Dr. Henry Dwight Chapin[5] has studied the effect of injections of **Horse Serum** upon various animals. In all of the cases, plain, sterilised horse-serum was employed. The horses had not been inoculated with any toxins, and were apparently healthy. The experiments were made upon dogs, rabbits, guinea-pigs, and sheep. Injections were made daily for from a week to ten days, when the animals were killed. No great change seemed to be produced in the blood as a result of the injections, but a condition of cloudy swelling was almost invariably found in the kidneys. However, the final verdict upon serum injections and serum therapy must rest upon clinical rather than laboratory evidence. Studies in the laboratory thus far made warn us to use this powerful agent carefully. If prolonged and careful clinical observations made under varying conditions and by different observers prove its utility, serum therapy, in spite of possible dangers, will have a brilliant future. Research in the line of separating the antitoxins, so that they may be given in an innocuous vehicle, or highly concentrating them in small quantities of serum, seems to be the next step desirable.

Dr. J. S. Billings[6] has studied the condition of the blood corpuscles in diphtheria in connection with injections of antitoxin, and finds that it has no deleterious effects upon the blood corpuscles. On the contrary, it seems to prevent degenerative changes which would otherwise be brought about.

Drs. Seibert and Schwezer[7] discuss the cause of sudden death after injections of antitoxin, and express the firm opinion that the sudden deaths reported after antitoxin injections were caused by injected air, and not by anti-diphtheritic serum.

Dr. Edwin Rosenthal[8] reports a reduced period of intubation by the serum treatment of laryngeal diphtheria. The operation of tracheotomy is avoided, intubation being sufficient to cure even the long cases, five days and over. The use of serum has placed intubation on a definite basis by: (1,) Lowering the mortality; (2,) Shortening the period of intubation; (3,) Avoiding the major operation of tracheotomy.

The most important report[9] of the year upon antitoxin is a result of the American Pediatric Society's collective investigation into the use of antitoxin in the treatment of diphtheria in private practice.

The report includes returns from six hundred and fifteen physicians. Of this number more than six hundred have pronounced themselves as strongly in favour of the serum treatment, the great majority being enthusiastic in its advocacy.

The society voted to accept the report of the committee, and after a full discussion it was decided to embody its conclusions in the following resolutions:—

(1,) *Dose:* For a child over two years old, the dose of antitoxin should be in all laryngeal cases with stenosis, and in all other severe cases, from 1500 to 2000 units for the first injection, to be repeated in from eighteen to twenty-four hours if there is no improvement; a third dose after a similar interval if necessary. For severe cases in children under two years, and for mild cases in those over that age, the initial dose should be 1000 units, to be repeated as above mentioned if necessary; a second dose is not usually required. The dose should always be estimated in antitoxin units, and not in the amount of serum.

(2,) *Quality of antitoxin:* The most concentrated strength of an absolutely reliable preparation.

(3,) *Time of Administration:* Antitoxin should be administered as early as possible on a clinical diagnosis, not waiting for a bacteriological culture. However late the first observation is made, an injection should be given unless the progress of the case is favourable and satisfactory.

REFERENCES.—[1] "Buffalo Med. Journ.," 1896, vol. xxxv, No. 8; [2] "Arch. Ped.," July, 1896; [3] "Med. News," 1896, vol. lxviii, page 216; [4] "Med. Record.," vol. xlix, No. 11, 1896; [5] Ibid., vol. xlviii, No. 21, 1895; [6] Ibid., vol. xlviii, No. 17, 1895; [7] "New York Med. Journ.," vol. lxiii, No. 22, 1896; [8] "Med. and Surg. Reporter," vol. lxxiv, No. 22, 1896; [9] "Arch. Pediatrics," July, 1896.

DIPHTHERIA (in Australia). *David Hardie, M.D., Brisbane.*

This disease, though endemic in Queensland during all seasons of the year, is specially prevalent during the months of April, May, June and July; the ratio between the second and fourth quarter of the year being, as seen from the following, fully 3 to 1.

Ratio per cent. for four Periods of the Year.—January to March, 19 per cent.; April to June, 38 per cent.; July to September, 30 per cent.; October to December, 13 per cent.

Diphtheria would appear to originate and spread *independently of insanitary conditions.* Several reasons may be given in support of this view. In the first place, it is not common in Queensland during a period when typhoid fever (in so far as the latter is related to atmospheric conditions) is prevalent, and is more than usually common when the latter is rare; in the second place, it is rare during a period when the rainfall is low; and in the third, it prevails mainly during the winter months. In other words, it is not commonly co-existent with a disease, that in some form or other is associated with insanitary conditions; it is intimately connected with atmospheric conditions, such as high tropical rainfall, that tend to improve our sanitary surroundings; and it reaches its maximum during a period of the year when putrefaction and insanitation are reduced to a minimum. If this be explained on the ground of greater vulnerability during the colder months of the year, we may even then fairly assume, that of the two—vulnerability and insanitation—the former element is more important than the latter in relation to the prevalence of diphtheria.

TREATMENT.—The use of **Antitoxin** in diphtheria was commenced at the hospital for Sick Children, Brisbane, in January, 1895. Since then eighty-five cases have been under treatment, the first series of thirty-six cases, giving a mortality of 22·2 per cent., and the second series of forty-nine, the very low mortality of 12·2 per cent., the death rate of the whole being 16·4 per cent. The second series received antitoxin in larger doses; hence presumably the low mortality of this series. Prior to the antitoxin period, the mortality in a series of over three hundred cases was as high as 41·9 per cent. Equally favourable results were shown amongst the laryngeal cases of the series that required the operation of intubation or tracheotomy while under treatment by antitoxin. Of the first series of thirty-six cases sixteen were intubated, giving a mortality of 43·7 per cent., and of the second series of forty-nine cases twenty-one were intubated with a mortality of 24 per cent., the death rate of the whole number of cases requiring operation being thus 32 per cent. Prior to the antitoxin period, the mortality amongst one hundred and sixty-six

operative cases, was as high as 63 per cent. The results are clearly seen in the following table, partly taken from the latest hospital report, and further supplemented by Dr. Ashworth:—

CASES.	MORTALITY.	OPERATIONS.	MORTALITY.
Prior to Jan., 1895, treated *without* antitoxin—303	41·9 per cent.	166	63·0 per cent.
From Jan., 1895, to July 1st, 1895, treated *with* antitoxin—36 ..	22·2 per cent.	16	43·7 per cent.
From July 1st, 1895, to Aug. 15th, 1896, treated *with* antitoxin in *larger doses*—49	12·2 per cent.	21	24·0 per cent.
Total treated with antitoxin—85	16·4 per cent.	37	32·0 per cent.

Nearly all the cases treated with antitoxin have been verified by bacteriological examination, conducted at first by the Government Bacteriologist, and latterly by Dr. Turner.

With regard to doubtful cases, Drs. Turner and Ashworth[1] "consider that in hospital practice it is far safer to inject a doubtful case with serum, and place it at once in a diphtheria ward, than to place it in any part of the hospital which is imperfectly isolated from the other patients. Should the case turn out to be really diphtheritic, it will have received the benefit of an early injection of serum. Should it turn out to be non-diphtheritic it will be sufficiently protected against possible infection."

The following table gives a rough outline of the primary doses given lately at the Children's Hospital, according to the duration of the disease, and to the local and constitutional symptoms; it being understood that further injections are made in such doses, and at such intervals, as the progress of the case demands:—

DAY OF DISEASE.	EXTENT OF MEMBRANE.	GENERAL SYMPTOMS.	DOSE OF ANTITOXIN.
Under 3rd day ..	Limited ..	Mild ..	600 units (Behring), or 20 c.c. (Ruffer)
Ditto ..	Extensive	Severe	1200 units (Behring), or 40 c.c. (Ruffer) (Repeated in twenty-four hours)
From 3rd to 5th day ..	Limited ..	Moderate	1200 units (Behring), or 40 c.c. (Ruffer)
Ditto ..	Extensive	Severe	1200 units (Behring), or 40 c.c, (Ruffer) (Repeated in twelve hours)
Over 5th day	Extensive	Severe	1800 units (Behring), or 60 c.c. (Ruffer)

Tracheotomy versus Intubation.—Intubation was commenced at the Hospital for Sick Children, Brisbane, in 1892. Since then only two primary tracheotomies have been performed, and in only eight cases has secondary tracheotomy been resorted to. As the treatment by antitoxin has reduced the mortality of operations from 63 to 32 per cent., a fair estimate of the comparative death rate following tracheotomy and intubation can be made only by comparing the statistics prior to this period. We thus find, from figures supplied by Dr. Turner, that during the three years from June 30th, 1889, to June 30th, 1892, seventy-four operations were performed—sixty-eight of which were tracheotomy and six intubation—the mortality of these cases being 68·9 per cent. During the two-and-a-half succeeding years, from June 30th, 1892, to January 1st, 1895, there were ninety-four operations—all, with one exception, intubation—the mortality being 57·4 per cent.

Approximately therefore, prior to the antitoxin period, the mortality following tracheotomy was 68·9 per cent.; that following intubation was 57·4 per cent.; in favour of intubation by 11·5 per cent.

REFERENCE.—[1] "Intercolonial Quart. Journ.," Feb., 1896.

DISLOCATIONS. *Priestley Leech, M.D., F.R.C.S.*

An example of the rare accident, simultaneous dislocation of both shoulders, is given by Mr. Oldacres[1] The patient, a man, aged sixty-four years of age, fell from a ladder while thatching a cottage, and suffered a sub-glenoid dislocation of both shoulders and a fracture of the left femur.

REFERENCE.—[1] "Brit. Med. Journ.," Nov. 9, 1895.

DYSMENORRHŒA (Causes and Treatment of).

Thomas More-Madden, M.D., F.R.C.S., Dublin.

In a branch of medicine so rapidly progressive as gynæcology, the periodical re-consideration of questions, such as that with which we are here concerned, is inevitable. Hence, as one of those who have taken part in former discussions on this subject, and who believe that they who have already done so need have no hesitation either in recanting opinions which time has corrected, or on the other hand in reiterating views that have been confirmed by further investigation, I now submit the following *résumé* of my clinical experience with regard to the etiology and therapeutics of difficult menstruation. Of late years a tendency has been evinced by some gynæcologists to minimise the importance of the obstructive origin of dysmenorrhœa, and as I am myself unable to agree with this view, I shall in the first place briefly recapitulate my own experience of the most common

causes of painful menstruation, the frequency of which is illustrated by statistics to which I have elsewhere referred. Thus, of all those disorders of menstruation which furnish a large proportion of the gynæcological cases treated in the hospitals with which I am connected, dysmenorrhœa is that most frequently noted, not only at the earlier catamenial periods, but also in later or married life. In the former, this trouble commonly comes before us in association with one or other of the manifold reflex or sympathetic nervous or constitutional derangements traceable to the imperfect accomplishment or evolution of the catemenial function in cases of difficult or painful menstruation; whilst in subsequent years it is no less often brought under observation as one of the evidences of some of the local causes of infecundity.

Dysmenorrhœa, as I have just said, comes before us more frequently than any other catamenial derangement. Thus, for instance, in a thousand gynæcological cases of every kind noted in the out-patient department of my hospital, in one hundred and eighty-nine instances some menstrual disorder was especially complained of, viz., dysmenorrhœa in one hundred and ten, amenorrhœa in forty-two, and menorrhagia in thirty-seven cases. These figures, although they cannot be perhaps regarded as representing the exact proportion of each of these complaints (inasmuch as, whilst many women may long suffer from amenorrhœa or menorrhagia before obtaining medical advice, few patients can long withstand the periodic recurrence of the tortures of acute dysmenorrhœa without seeking relief), nevertheless at least show the greater frequency with which, in the instances referred to, such cases were brought under my clinical observation, and help to prove the fact that dysmenorrhœa is here, as elsewhere, the most frequent of all catamenial complaints.

Classification of Dysmenorrhœal Cases.—In the clinical records of the hospital on which the foregoing statement as to the frequency of dysmenorrhœa is founded, it was deemed advisable to classify in some way the different cases and forms of dysmenorrhœa there noted, and for this purpose their ordinary sub-division under the three headings of "neurotic, congestive, and obstructive dysmenorrhœa" was followed. But however convenient for reference or description any arrangement such as this may be, it must at best be merely arbitrary and often inapplicable, being obviously founded on the greater or lesser predominance in each instance of one or other of the special symptoms of the co-existent neurotic or inflammatory condition, or of those still more directly due to local and mechanical causes. It, therefore, cannot be too explicitly stated or too often reiterated that in every

case and form of dysmenorrhœa there is one common factor in the causation of the complaint to be reckoned with, viz., some obstruction, physical or mechanical, to the free escape of the catamenial outflow, which impediment may be due either to the condition of the parts concerned in the menstrual function, or to the character of the resulting discharge; and on the recognition and removal of that obstacle, whether by constitutional remedies, as may be possible in certain instances, or by local measures, as is necessary in a far greater number of cases, will be found the key to the general pathology and successful treatment of painful menstruation. This general statement is, I think, equally applicable to every variety of dysmenorrhœa, not only in its uterine forms, to which the following observations are chiefly confined, but also to those no less important cases in which the causes of the complaint are traceable to the condition of the ovaries or of the Fallopian tubes, and to the consideration of which, I hope, possibly, to be able to return on a future opportunity.

Diagnosis.—Of the uterine causes of dysmenorrhœa, as well as of the commonly co-existing sterility of the patient in such cases, probably the most important is obstruction, congenital or acquired, of the cervical canal. The consequences, immediate or remote, of this condition are daily brought under gynæcological observation, and unquestionably few of the complaints that come before us in our branch of practice give rise to more intense and persistently recurring suffering. Nor is there any disease which, when unrecognized as to the true cause, and hence, as is too often the case, treated by sedatives, spasmodics, and other equally ineffectual palliative remedies, may produce more serious ill effects, not merely on the general health, but also on the cerebro-nervous system of the patient. Hence the necessity in all cases of persistent uterine dysmenorrhœa (when not obviously of a purely nervous form) of careful local examination, by which the existence, position, and cause of any uterine mechanical obstruction to the menstrual flux can be ascertained.

Causes.—Obstructive dysmenorrhœa may result: (1,) From stenosis, congenital or acquired, of the cervical canal, and more especially of the os internum; (2,) From constriction of the canal by an acute flexion; (3,) From the presence of a uterine tumour; (4,) From obstruction occasioned by an inter-cervical neoplasm. In the majority of instances, however, this condition is consequent on simple congenital atresia of the cervical canal, or on its occlusion by plastic exudations resulting from endometritis. The next most commonly-observed of these mechanical causes of dysmenorrhœa are the different flexions of the uterus. The frequency of the former class

of cases is far greater than is generally supposed. Thus, as I stated in a paper read at the Berlin meeting of the International Medical Congress, in my hospital nearly 11 per cent. of instances of obstructive dysmenorrhœa, or of sterility similarly caused, had been under observation in a total of 7,000 gynæcological cases.

Symptoms.—I need not here enlarge on the symptoms of obstructive dysmenorrhœa, as these vary widely in each case in accordance with the situation, causes, and extent of the obstruction, and the constitutional condition of the patient. The existence of obstruction, whether from stenosis, flexion, or pressure, may be commonly inferred from the character of the pains attending the uterine efforts to overcome the mechanical obstacle to the catamenial flux, these pains in such cases being extremely similar to the grinding or cutting pains of the first stage of labour, and often equalling in intensity, the throes of parturition rendered difficult by persistent rigidity of the os uteri. Moreover, under such circumstances, we are very likely to have extension of the resulting irritation from the uterus to the Fallopian tubes or to the ovaries, producing all the symptoms of salpingitis or oöphoritis. After a variable period of suffering, in most instances the obstruction is at last temporarily overcome, and the dysmenorrhœal dribble is frequently succeeded by a profuse menorrhagic discharge, after which the patient's troubles are over for that month. In some instances the obstruction proves more intractable, and the pain continues until the catamenial flux has ceased, or the uterine action, as occurs in some instances, forces the retained menstrual fluid through the free orifices of the Fallopian ducts, and so may give rise to pelvic peritonitis or hæmatocele.

TREATMENT.—In any case of obstructive uterine dysmenorrhœa it is obvious that the only rational course of treatment is the removal of whatever may be the physical impediment to the escape of the menstrual fluid, and that in such cases no curative effect can be expected from any drugs, however useful some of those may be as palliative agents. Thus, for instance, if catamenial pain be due to an acute flexion, the dysmenorrhœa can be cured only by rectification of the malposition; or if occasioned by pressure on the cervix of a uterine or other tumour, this must be removed or pushed well up above the pelvic brim. In like manner in those far numerous cases in which the difficulty arises from cervical stenosis, this must be overcome before we can hope to remove the menstrual suffering.

Dilatation of the Cervical Canal.—I do not propose in this connection to re-discuss the various means from time to time suggested for the mechanical dilatation of the cervical canal in cases of obstructive

dysmenorrhœa; nor need I here refer again to the history of the successive steps by which the formerly-employed methods of expanding the stenosed passage by means of sponge tents, laminaria bougies, and other similarly tedious, painful, and often hazardous appliances, have now become generally replaced by rapid dilatation with the assistance of one or other of the dilating instruments suggested by Lawson Tait, Hegar, Duke, and others, including myself. For my own part I prefer the dilator I devised for this purpose, and which has been recently modified and rendered more effective. This instrument, the pattern of which is here shown (*Fig.* 19), differs from others of the same class in the circumstances that the

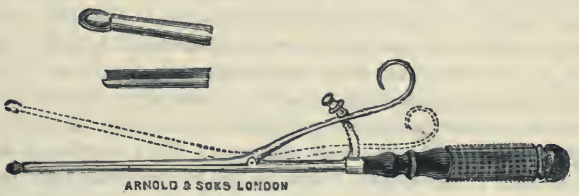


Fig. 19.

expansion effected therewith is in imitation of the natural process of uterine dilatation during menstruation, viz., from the os internum downwards in the course of the cervical canal; and, from subsequent experience of its use in many hundreds of instances of obstructive dysmenorrhœa, I would recommend it to other gynæcologists as an effective and, when properly used, with due caution, and in suitable cases, a safe means of rapidly overcoming cervical stenosis, and so relieving consequent dysmenorrhœal pain.

The Use of Metrotome, etc.—In such cases I regard the use of any cutting instrument as, generally speaking, unnecessary, occasionally giving rise to troublesome hæmorrhage, and still more objectionable by reason of the liability of the cervical incision to become a portal for the introduction of sepsis, as I have seen exemplified in more than one instance. In some few exceptional cases of dysmenorrhœal stenosis, however, the obstruction may be so unyielding that it cannot be overcome by any available method of dilatation, and such cases may probably be best dealt with by the cautious use, with due aseptic precautions during and after the operation, of Sims' knife, or else of a single-bladed metrotome, such as Simpson's preferably to any of the more recent instruments of the same kind. Whilst as to scissors, such as Küchenmeister's, the use of which is still recommended by some writers in the cases now under consideration, all I can say is

that their employment appears to me likely to expose the patient to all the septic dangers above referred to with little probability of relieving the disease for which they are employed, cutting, as they do, the os externum, where obstruction comparatively seldom exists, into a gaping wound with everted or retracted lips, and leaving untouched the os internum, which, as I believe, is the actual seat of the stenosis in nine-tenths of these cases.

Maintaining Patency of Canal.—Whatever method of dilatation be adopted to effect the cure of obstructive dysmenorrhœa, it is obviously essential that the patulous condition of the cervical canal should be permanently maintained. For this purpose, as far as I know, no very generally applicable and effective means was available, with the exception of Dr. Greenhalgh's elastic stem, which I have used with advantages in many instances, until some little time ago, Dr. Duke, of Cheltenham, suggested the use of a spiral wire stem, to be introduced directly after operation and kept *in situ* until all tendency to subsequent contraction has been overcome. This suggestion was one which at first I was rather sceptical as to the advantage of, as it appeared to me probable that the stem might prove not only an immediate source of local irritation, but also subsequently a focus for sepsis. However, from a fair trial of this appliance, which I have now used very extensively, I can corroborate the advantages claimed for its employment. These stems, which as now made by Messrs. Arnold, being extremely flexible, and grooved in accordance with Dr. Duke's recent directions, so as to permit the free escape of discharges, as well as open from point to point, may be left *in situ* for some time, provided always that due aseptic precautions be taken by regular daily vaginal irrigations to keep the passage and stem perfectly free from all morbid secretions. As a rule, however, I think that no stem should be worn continuously for more than a fortnight, or at most a month; and in any case if, notwithstanding the precautions above referred to, any inflammatory trouble or septicæmic symptoms should supervene, it should, of course, be immediately withdrawn.

Congestive Dysmenorrhœa is of special clinical interest as a frequent result of chronic endometritis, and hence is more commonly met with later in life and in married women than other varieties of dysmenorrhœa. In the congestive condition on which this form of difficult menstruation is consequent, besides the uterus and its appendages, the other pelvic as well as abdominal viscera are usually more or less involved, as is more particularly seen in the frequently engorged state of the portal circulation in such cases. In most of these instances the tumefied uterus is, moreover, to some extent dis-

placed, either by ante- or retroflexion or version from the greater degree of congestive hypertrophy that may be developed in one or other of its walls, or else is forced down lower than its normal position in the pelvis by its generally augmented bulk and weight. In the same way the functions of the rectum and bladder are interfered with, a certain amount of cystitis or vesical irritability or hæmorrhoidal trouble being seldom absent in cases of this kind.

Symptoms of Congestive Dysmenorrhœa.—For a few days before the menstrual period the patient generally complains of some degree of lumbar pain and sense of uterine weight and bearing down, gradually developing on the approach of the "change" into acute localised intermittent pain and persistent feeling of distension and discomfort in the hypogastric region, which steadily increases, and is followed by distinctly expulsive pains, accompanied by a scanty menstrual discharge, in many instances intermixed with membranous shreds or clots. This often abates or entirely ceases on the third or fourth day, and in some cases the discharge ceases for a day or so during the menstrual period, and then returns in intermitting gushes.

TREATMENT.—To cure congestive dysmenorrhœa we must, in the first instance, relieve the uterine hyperæmia of which the menstrual difficulty is symptomatic by those measures that have been fully described in my previous communication on endometritis. In all cases such as these, warm hip-baths and hot-water irrigations (per rectum and vaginam) are generally serviceable in the immediate relief of the catamenial pain, as in the same way are also the various time-honoured and well-known special uterine and general nerve sedatives and stimulants, such as **Castor, Guaiacum,** etc., to the use of which I need not here further allude. In the general treatment of congestive dysmenorrhœa it is of special importance to relieve abdominal and pelvic visceral congestion as far as possible by saline purgatives, such as a teaspoonful of **Carlsbad** or **Glauber's Salts** in a half tumblerful of hot water once or twice a day; and with the same object of diminishing as far as possible the hyperæmia of these and other organs, nothing appears to me more generally serviceable in such cases than the free use of **Bichloride of Mercury** with **Iodide of Potassium** and **Bark.** In such cases local treatment must always be conjoined with the general remedies just referred to. In many instances, to unlock the uterine hyperæmia, free **Scarification of the Cervix,** followed by the **Glycerine Tampon** and **Hot-water Irrigations,** if persevered in for some time will prove effectual, and should be fairly tried in the first instances. In some cases, however, it will also

be found necessary to resort to intra-uterine treatment by the dilatation of the cervical canal and the subsequent employment of the **Curette,** by the use of which the diseased endometrium may be scraped away, whilst by the ensuing hæmorrhagic discharge the local congestion may most directly be dealt with.

Probably no one who has read my previous communication on the subject of obstructive dysmenorrhœa, will accuse me of any tendency to minimise the importance of mechanical and operative treatment in such cases. But, at the same time, I am bound to observe that these methods are occasionally pushed to an undue extent by practitioners who apparently ignore the fact that, common as is the obviously obstructive form of dysmenorrhœa, this complaint may also occur in cases and from causes beyond direct or mechanical treatment of this kind, viz., as the result of ovarian or Fallopian tube disease, or as the consequence of a constitutional, neurotic, or hyperæsthetic condition, which may be best treated by attention to the general health of the patient. In the latter cases the most signal benefits are often derivable from the free use of nerve tonics, such as the preparations of **Valerian** and its combinations, and more especially the **Valerianates of Quinine** and **Iron,** together with **Bromides of Sodium** or **Potassium** as nerve sedatives; and, if necessary, as a temporary measure, to allay extreme dysmenorrhœal pain, **Opiates** and **Cannabis Indica,** which, in such cases, may be most advantageously given by the rectum rather than by the mouth or hypodermically.

Nervous or Spasmodic Dysmenorrhœa.—In early menstrual life a very frequent form of dysmenorrhœa is that described as neurotic or spasmodic, and, moreover, in every variety of this complaint, and at every age at which it may occur, the neurotic element to a large extent complicates whatever other cause painful menstruation may be dependent on. Hence the brief account which I have already given of the ordinary symptoms, and general palliative treatment of dysmenorrhœal pain may be also applied to the nervous or neuralgic types of this affection.

Membranous, or Pseudo-membranous, Dysmenorrhœa, to which attention was first called by Morgagni, who, upwards of a century ago, observed the periodical expulsion of membranous casts or shreds with the catamenial flux in cases of painful menstruation, has been, and is yet, described as a distinct and special form of the complaint under consideration. This view appears to be quite erroneous, however—the common occurrence of such shreds or clots in the menstrual discharge of dysmenorrhœal patients generally having been

clearly demonstrated by Sir John Williams in his conclusive statistics. Moreover, as was long since shown by Oldham and again by Bernutz, whose remarks as bearing on this point may be here briefly recapitulated, these products, which are composed entirely of the histological elements of the uterine mucous membrane, and ought consequently to be ascribed to a disturbance of the ordinary physiological moulting of which the generative organs become the seat at each catamenial period, are occasionally met with in typical instances of each of the three forms of dysmenorrhœa, *i.e.*, obstructive, congestive, and neuralgic, already described. Nor is the membranous expulsion of such importance as a cause of painful menstruation, as is commonly supposed. On the contrary, as Bernutz observed, "The difficulty arises from the morbid condition of the attached uterine mucous membrane, especially the cervico-uterine portion of it." "I willingly allow," adds Bernutz, "that the dysmenorrhœal membrane floating about the cavity of the uterus may occasion temporary difficulty to the exit of the menstrual fluid (acting as a ball valve), just as a clot might do, but I do not believe it would give rise to so serious an obstruction as occurred in these cases, unless there co-existed defective dilatation of the cervico-uterine canal." This view has not been displaced by any more recent observations, and in my own practice I have acted on it with advantage by dilating the cervical canal and curetting the endometrium in many instances of this kind.

EAR (Diseases of). *J. Dundas Grant, M.D., F.R.C.S.*

TREATMENT.—*Acute Otitis Media.*—Gradenigo and Pes[1] insist on the avoidance of syringing after the spontaneous or artificial evacuation of the secretion. They advise the introduction of a strip of **Iodoform Gauze** into the canal, and the filling of the concha with iodoform gauze or wool, the whole to be left undisturbed for at least twenty-four hours. They avoid also inflation of the middle ear, but they treat the nose and throat most carefully. Müller[2] advises early paracentesis in all cases, except those in which there is advanced tuberculosis or marked diabetes. In twenty-five cases there was only one in which there was failure to produce an immediate good result. Dench[3] begins with the abstraction of blood from the region of the tragus, supplemented by the use of dry heat. If the symptoms continue, he considers a free aseptic incision necessary, and holds that, even in the hands of a general practitioner, it is a far safer procedure than leaving the disease to itself. Szenes found good results from the instillation of warm drops of **Carbolized Glycerine** (10 to 20 per cent.); also from the insertion in the meatus, for twenty-four hours at a time, of a strip of

gauze impregnated with a 10 to 15 per cent. solution of **Menthol** in oil.

In a discussion on the treatment of acute otitis media and suppurative mastoiditis, opened by Hessler,[4] in the German Otological Society, an early curvilinear incision in the membrane was recommended; syringing, inflation, and boric acid insufflation being forbidden. Several speakers objected even to dry mopping. In cases of acute mastoiditis, chiselling by Schwartze's method was advocated.

In acute inflammation of the tympanic attic, Tansley[5] insists on prompt incision through the flaccid membrane. Douching and syringing are then to be avoided, and the meatus is to be closed with absorbent cotton (or antiseptic gauze).

Chronic Non-Suppurative Otitis Media.—Traction on the handle of the malleus was accidentally discovered by Shastid[6] to effect considerable improvement. He then employed it in several cases with good results, even when Politzerization and massage were powerless. He employs a fine blunt hook, which he introduces through the membrane in front of the manubrium. The meatus is first cleansed and sterilized, a scratch is made at the site of the intended puncture, a 20 per cent. solution of cocaine is instilled and allowed to remain for five minutes; an incision is then made, and the hook is introduced.

Dr. William Hill[7] urges that the Eustachian bougie should be employed before any case of chronic dry catarrh of the middle ear is set down as insusceptible of benefit. Dr. Dundas Grant considers Weber-Liel's intra-tympanic catheter a very suitable instrument for use as a bougie, being smooth and flexible, and permitting of verification of the accuracy of its introduction by auscultation during inflation.

The injection of **Liquid Vaseline** through the Eustachian catheter or intra-tympanic catheter, devised by Delstanche, has been tested in Gruber's clinic by Alt.[8] He found it harmless, and highly beneficial in chronic adhesive otitis. In sclerosis it was but rarely beneficial, and then only slightly. The matter was discussed in the Congress of Otology, at Florence,[9] where the editor (D. G.) expressed the opinion that its use was most valuable in non-sclerotic cases, useless in sclerotic cases, and of experimental value in doubtful ones.

Massage of the tympanum by means of interrupted pressure in the meatus with the finger-tip is recommended by Randall[10] as a substitute for the well-known "tragus-pressure." Intra-tympanic massage through the Eustachian catheter is practised by Wurdemann[11] by means of compressed air conveyed through an india-rubber tube to the Eustachian catheter. Interruptions are made by compressions of the tube.

Chronic Suppuration of the Middle Ear.—Hoover[12] narrates cases in which he effected cure by applications of **Tincture of Iodine** on a probe wrapped with cotton two or three times a week, after other means, including treatment of the naso-pharynx, had failed. The frequently resulting caries of the ossicle calls for excision of the remnants of the membrane and the carious ossicles, and good results from this have been obtained by many aural surgeons. Milligan's paper, in the "Medical Annual" for 1894, contains ample evidence of this. Gellé[13] states that his experience leads him to attribute chronicity of suppuration to involvement of the mastoid in most cases, but we should certainly consider a trial of removal of ossicles before resorting to mastoid operation, unless otherwise specially indicated on constitutional or local grounds. Barr[14] narrates eight cases in advocacy of the treatment of intractable suppuration of the middle ear by operation through the mastoid. Bronner[15] directs attention to the frequently overlooked affections of the "attic," to which the chronicity of aural suppurations is often due. He advocates enlargement of the perforation in Shrapnell's membrane, use of the intra-tympanic syringe, insufflation of antiseptic powders, removal of granulations, etc. Failing these, the ossicles should be removed, and only then should resort be had to the operative laying-open of the attic. Bronner recommends access being obtained from above rather than from behind, and he brings the external incision down to the front of the tragus. Dundas Grant[16] advised earlier adoption of operative procedures in hospital than in private practice, as a general rule, on account of the greater difficulty in getting the conservative cleansing measures thoroughly carried out. He strongly recommended the use of Milligan's intra-tympanic syringe. Bates[17] advises the "Stacke" operation for the cure of chronic otorrhœa. He makes no flaps from the meatus, and uses no plugs, but instils balsam of Peru two or three times a day to prevent infection. The use of the **Balsams of Peru** or **Tolu** as instillations has been advised in "scrofulous" otorrhœa by Isaia.[18] Before introducing the balsam (diluted with from 1 to 5 times the amount of rectified spirit) he cocainises the meatus and tympanum. Faulder White,[19] in a sweeping condemnation of mastoid operations, recommends very highly the use of a solution of **Silico-fluoride of Potassium** as an antiseptic solution in chronic suppuration of the middle ear.

Milligan[20] has shown, by means of inoculation experiments, that eight out of ten cases in which there occurred a discharge from the mucous membrane of the middle ear, unaccompanied by pain or any of the usual symptoms of an acute sthenic inflammation, and a

perforation in the centre of a pale, œdematous and uninflamed membrana tympani, were of tuberculous nature.

Kretschmann[21] draws attention to the occurrence of disease of the floor of the tympanum as a cause of the chronicity of middle ear suppuration, and calling for carefully localised treatment. It is, of course, immediately over the bulb of the jugular vein, which is readily infected.

Okerneff[22] considers **Trichloracetic Acid** an invaluable remedy for checking suppuration, removing fœtor, and even bringing about the closure of perforations.

Gomperz[23] tested on ten patients the effect of this application as regards closure of old perforations. After cocainisation, the deliquesced acid was applied to the edge of the perforation by means of a fine probe coated with cotton wool. In four the perforation closed up completely, and in the other six diminished in size, so as to give every promise of ultimately closing in course of time.

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ECZEMA.

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Rotter[1] recommends the following ointment for eczema: **Formalin,** 25; **Oxide of Zinc** and **Talc,** of each 25; **Vaseline,** 50.

Cantrell[2] points out that the pustular variety of eczema is usually seen during the first year of life, while the vesicular form is encountered between that and the fifth year. In the treatment of this condition he advises the early application of a **Bran Bath,** followed by the use of one of the following ointments: When the part is highly inflamed, **Boric Acid, Washed Sulphur** or **Calomel,** in the proportion of 20 grains to the ounce of ointment base. When there is more infiltra-

tion than inflammation, **Salicylic Acid, Salol** or **Resorcin** may be used in strengths varying from 20 to 60 grains to an ounce of the base.

Mr. Hutchinson[3] recommends the application of **Tar** and **Lead**, with **Arsenic** internally, in eczema of the nails.

Lassar,[4] treating of the principles of treatment, insists on a searching enquiry in regard to local cases, and says that the assumption of some internal irritant is the refuge of ignorance. He by no means shares the widespread prejudice against water, and advises **Tar Baths** for the purpose of disinfecting the skin. After the bath, **Venetian Talc** is freely dusted all over and around the affected area. If the disease persist, he considers that the irritant has been more intense, and has reached further down; and he attributes the success of his well-known paste to the fact that the fatty vehicle carries the antiseptic further in. For obstinate forms, he recommends **Wilkinson's Ointment**, which consists of equal parts of sulphur and oleum rusci, 1; prepared chalk, ¼; soft soap and vaseline, of each 2.

Rushton Parker[5] reports a case of widespread eczema on an elderly woman, which improved rapidly under **Thyroid Tabloids.** Dr. Parker, however, points out that there were a good many symptoms pointing to myxœdema, such as bagginess and dryness of the skin, and a sense of chilliness and laziness. The results were, at all events, very much more satisfactory than we have ever seen in a case of eczema treated by thyroid gland.

Dr. Gilrouth[6] describes a case of eczema cured by the administration of thyroid. The patient had a small hard gôitre on the side of the neck. It must, however, be noted that the local treatment was changed from ointments to **Simple Dusting Powder,** which no doubt also aided in the improvement.

Leslie Philips[7] recommends the use of **Olive Oil** as a substitute for water to cleanse the skin. He mentions that pustular eczema requires washing at intervals with soap and water.

Vulvar Eczema.—Lutaud[8] considers that eczema of this region is usually seborrhœic. He is a strong advocate of internal treatment, and diets his patients, causing them to avoid coffee, alcohol, pork, fish, game, and most of those delicacies which make life worth living. The patients are, however, allowed to drink milk. He employs laxatives freely: **Podophyllin** for those who are fat, **Rhubarb** and **Senna** for the thin. He also gives internally every morning a teaspoonful of our old friend **Sulphur** and **Cream of Tartar.** As a local application, he prefers **Bran Water** with **Boric Acid**, and, between the attacks, **Salicylic Paste.** He also uses **Carbolic Acid**, 0·25; **Balsam of Peru**, 2; **Oil of Sweet**

Almonds, 100. Dusting powders should be freely used. The patient should have a prolonged **Sitz Bath** morning and evening.

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ECZEMA SEBORRHŒICUM PSORIASIFORME.

William S. Gottheil, M.D., New York.

The eczema of to-day can hardly be regarded as a disease entity, and the phenomena now grouped under that name are undoubtedly destined to be re-classified in the near future. The process has already begun, and the confusion incident thereon bids fair to be heightened by a faulty, or rather an unfortunate terminology. Such was the case when Unna, some ten years ago, separating from the seborrhœas and the eczemas a very common form of skin disease that possessed some characteristics of both maladies, yet belonging properly to neither, called the affection eczema seborrhœicum. It would have been better had he given it a more distinctive name, even had it been one as uneuphonious as the sudolorrhœa proposed by Piffard.

The belief that seborrhœal eczema is parasitic is gaining ground, though the theory still lacks the proofs of culture and inoculation. In its commonest form, as an area of reddened, dry skin, covered with a more or less abundant amount of minute, greasy scales, it is found on the scalp, forming the condition known as seborrhœa sicca or pityriasis capitis, the usual cause of premature baldness. It is found in that location in every case of the disease, often ending in an abrupt crescentic line, the seborrhœal crown, on the forehead, and extending unto the ears and neck. On the body itself it occurs in a variety of forms, the commonest being the circinate variety, first described and figured by Unna. The pinkish areas form circles or segments of circles of a yellowish red colour with sharply marked reddish borders and fainter yellowish pink centres, with a varying amount of greasy, greyish yellow scales. In other cases there is a more diffuse erythematous redness, with a small fine desquamation ; and again, the patches may assume the moist and weeping appearances of the ordinary eczema. In rare cases the amount of scaling is great, and the patches, discrete or confluent, simulate psoriasis in appearance. From this latter they may be distinguished by their location on the trunk, and not on the flexor surfaces of the limbs ; by the presence of seborrhœal eczema of the head, by the yellow and fatty rather than dry and snow-white scales, and by the usually acute course of the disease. Of this rather rare variety,

PLATE V.

known as eczema seborrhœicum psoriasiforme, the case here shown (*Plate V*) is an example.

The patient was a young girl, thirteen years old, who, through the courtesy of Dr. Ludwig Weiss, of this city, I saw on Dec. 15, 1895. Her history was unimportant, her internal organs were normal, and her general health was good. Some four weeks before, the eruption had begun with redness, itching, and slight scaling of the face and scalp, and it had gradually spread until the entire body was covered. At the present moment the picture from the neck up is that of an intense seborrhœal eczema of the ordinary type. The skin of the face and neck is diffusely reddened, and more or less covered with a fine, furfuraceous desquamation. The scalp is thickly covered with greyish-white, greasy scales; and the seborrhœal crown on the forehead marks the limits of the daily use of soap and water.

On the trunk and limbs, however, the eruption is of a noticeably different character. On the shoulders and forearms are scattered pea to bean sized lesions, each consisting of a sharply limited erythematous patch covered with heaped-up scales. These scales are greyish and not pearly white in colour; they are readily detached without any bleeding points being left behind, and they are distinctly greasy and fatty to the touch. Towards the centre of the anterior surface of the body the patches become larger and the scaling more abundant; and in the inter-mammary and umbilical regions they form large confluent masses of heaped-up scales, which hide the redness underneath everywhere save in the isolated spots where the scales have been detached. The appearance of the eruption here is distinctly that of a guttate and diffuse psoriasis, and this is even more the case on the back. There, as the accompanying illustration (see *Plate*) will show, it resembles a nummular psoriasis very closely. The patches are mostly discrete, with normal skin between them; they are reddish in colour, slightly raised, and thickly covered with masses of heaped-up whitish-grey scales, many of which exhibit the cross-hatching so often seen in that disease.

The forearms and the backs of the hands are covered with confluent and discrete patches similar to those on the trunk. On the lower limbs, front and back, the eruption is of a more distinctly nummular type, and there are few coalescing scaly areas. The soles and palms are the only parts of the body that are entirely free from the eruption.

The differential diagnosis from psoriasis was an easy one, in spite of the superficial resemblance between the two diseases. The seborrhœal eczema of the face and scalp was distinctive; and on the nape of the neck the eruption was continuous with the psoriasiform lesions

of the back. The elbows and knees were almost entirely free from eruption, a thing that could hardly occur in a general psoriasis of this extent. The scales were greyish-white and fatty to the touch, not silvery and mother-of-pearl like; and no bleeding puncta were left behind when they were removed. Finally, the acute onset of the disease, and the fact that the patient had never had anything of the kind before, would militate against the idea of its being psoriatic in character.

The treatment was the routine one for seborrhœal eczema, **Lassar's Paste**, **Unguentum Aqua Rosæ**, with **Sulphur**, 10 per cent., and **Resorcin**, 3 per cent. later, and **Cod-liver Oil** and **Arsenic** internally. Recovery was slow but steady, and the patient was discharged with a normal skin in the month of May.

ELBOW (Dislocation of). (See "Amputations.")

EMPHYSEMA. *R. Shingleton Smith, M.D., B.Sc., F.R.C.P.*

Respiratory exercises have been adopted by Dr. Harry Campbell,[1] who states that such exercises benefit, not only by developing the lungs, and thus diminishing their liability to disease, but by facilitating the flow of blood and lymph. He points out that the chief trouble of the emphysema patient is his inability to adequately expire, and that this is due to the fixation of the chest in a position of extreme inspiration. He contends that this is due to the protracted over-action of the inspiratory muscles, no longer counteracted by normal pulmonary elasticity, and might be largely prevented by systematic long continued *ex*piratory exercises.

REFERENCE.—[1] "Bris. Med. Chir. Journ.," vol. xiv., p. 244.

EMPYEMA. *R. Shingleton Smith, M.D., B.Sc., F.R.C.P.*

Dr. Henry Koplik[1] divides the purulent pleurisies of childhood according to their mode of infection, into: (1,) Metapneumonic; (2,) Streptococcus empyemas; (3,) Tubercular infections; and (4,) Fœtid empyemas. In fifteen cases of empyema occurring in children he had found in nine the diplococcus of pneumonia in pure culture. Where the streptococcus variety is associated with a severe septic infection as scarlet fever, the prognosis is much more grave than in the other forms, although, of course, the tubercular empyemas almost uniformly present a bad prognosis. These tubercular empyemas were associated with very marked thickening of the pleura. The fœtid empyemas should be subdivided into: (1,) Those in which there is a streptococcus or pneumococcus infection; and (2,) Those in which there is a mixed infection. Those empyemas which seek to cure themselves spontaneously by perforation through a bronchus are particularly apt to be

of the fœtid variety. According to Gerhardt, most of the pleurisies occurring in children are purulent, and it has been estimated that fully two-thirds are metapneumonic.

Cantley[2] points out that the contents of an empyema may be re-absorbed, especially if the pneumococcus is the originating cause. It is, however, bad treatment to leave the case to nature, on account of the risk of rupture internally through the lung or externally through the chest-wall. Whenever pus is diagnosed in the pleural cavity it should be evacuated.

The objects of treatment are: (1,) To remove the pus; (2,) To prevent reaccumulation; (3,) To procure complete re-expansion of the lung; (4,) To leave behind no deformity.

Aspiration is at best a temporary and unreliable mode of treatment. A thick fluid blocks the cannula. Even in the most formidable cases some fluid is sure to be left behind, and will act as a source of irritation. If carried out too rapidly, there is danger of rupture of the lung and consequent pyo-pneumothorax, or of œdema of both lungs. It is, however, useful in cases of urgency; in cases of sero purulent effusions and as a temporary expedient in double effusions. Cases recover completely under this mode of treatment, but the risks are out of proportion to the advantages gained. If used, siphon aspiration is better than the use of the bottle.

Simple incision and drainage is better than resection of a rib or part of a rib. It is very exceptional in children not to be able to drain efficiently through an intercostal space. Recovery does not appear to be more rapid under treatment by resection, and the shock is more severe. Certainly the mortality from resection in children under three seems to be enormous as compared with the mortality among those treated by simple incision.

When the medullary cavity of a rib is laid open there is greater danger of pyæmia. The risk of hæmorrhage is very small under either mode of treatment.

It is unnecessary to explore the cavity and break down adhesions. In some cases it may be distinctly injurious.

The chances of a radical cure are certainly no better under treatment by resection. Out of a series, four were sent out with a sinus as compared with one of those treated by simple incision. There is greater liability to imperfect expansion of the lung and contraction of the side in cases treated by aspiration or resection or left to nature than if incision and drainage be adopted.

Resection should be reserved for the rare cases in which the ribs are closely approximated, or as secondary means to insure closure

of the sinus. It may be used as an accessory measure if drainage is found insufficient, subsequent to the simple operation. The tube should not be more than two inches long; it is not necessary to insert a long tube, as the mode of cure is not by granulation from the bottom, but by expansion of the lung, ascent of the diaphragm, and contraction of the side. It should be removed as soon as the discharge becomes scanty and serous, sometimes even as early as the third day; otherwise it acts as a source of irritation, keeping up the discharge, prolonging the illness, and militating against a cure.

Empyema in Children.—Dr. Joseph E. Winters [3] said it should be borne in mind that empyemata do not heal from the bottom, but by the expansion of the lung and the ascent of the diaphragm. It was by this expansion of the lung that the pus was expelled, and therefore any method of treatment prior to operation which would tend to reduce the intra-thoracic pressure was injurious.

Dr. Lewis W. Marshall,[4] Nottingham, from an analysis of forty-five cases of empyema in children, of which seven died, makes the following deductions: (1,) That free incision when done early is very successful; (2,) That the removal of a portion of a rib is never necessary in acute cases; and (3,) That a fatal issue at any age is rather the result of the neglect to recognize the true nature of the case than from the operation itself.

Dr. B. Scharlau [5] had employed the various methods in vogue, including incision, but in the last five years had adopted resection exclusively in more than two hundred cases. He believed that in empyema, as in all cases of large abscess, there should be a free opening for drainage. In about 50 per cent. of cases in children there were large clots in addition to purulent fluid, which must remain unless a free opening were made and they could be reached if necessary by forceps. After resection he had seen recovery in ten or eleven days, often before three weeks, while after simple incision six weeks elapsed. In incision there was more danger of inaccessible hæmorrhage.

A case of subdiaphragmatic abscess simulating empyema, reported by Dr. F. Tilden Brown,[6] affords an opportunity to emphasize what may prove to be of value in the diagnosis between subdiaphragmatic abscess and empyema—namely, when pus which is aspirated from a region common to both affections yields on culture a pure or mixed growth of *Bacillus coli commune* there is a strong probability that the point of suppuration is situated below the diaphragm.

Surg.-Capt. D. M. Moir,[7] writing on diaphragmatic pleurisy, comments on the occurrence of diaphragmatic empyema.

It may even happen that a considerable accumulation of pus may

be confined between the base of the lung and the diaphragm, and yet escape detection during life. Dr. Vincent Harris has described the case of a woman, who was treated for severe bronchitis and emphysema. She died a week after admission into hospital, and at the *post-mortem* a diaphragmatic empyema was discovered. Dr. Cullingworth also cites a case, in which an empyema was finally diagnosed by the late and sudden expectoration of pus; but the actual *diaphragmatic* empyema was only revealed at the autopsy. In both these cases the empyema was on the right side of the chest, and both were complicated by the existence of *serous* fluid in the costo-pulmonary portion of the pleural cavity.

If the clinical symptoms of diaphragmatic empyema are sometimes so puzzling as to elude diagnosis by skillful and experienced physicians, it is not to be wondered at that cases of diaphragmatic pleurisy are occasionally not diagnosed as such.

REFERENCES. — [1] "Pediatrics," Feb. 15, 1896; [2] "Archives of Pediatrics," March, 1895, "Therap. Gaz.," July 15, 1895; [3] "Pediatrics," Feb. 15, 1896; [4] "Lancet," Dec. 21, 1895; [5] "Med. Record," Jan. 25, 1896; [6] "New York Med. Journ.," Feb. 29, 1896; [7] "Indian Lancet," Nov. 1, 1895.

EMPYEMA OF ANTRUM. (See "Antrum.")

ENDOMETRITIS. (See "Dysmenorrhœa," also "Metritis.")

ENTERIC FEVER. (See "Typhoid Fever.")

EPILEPSY. (See also "Brain.")

Græme M. Hammond, M.D., New York.

Dr. Charles Potts[1] reports seventeen cases of epilepsy treated by **Solanum Carolinense.** Five cases were not improved, but two of these were of organic origin, and consequently improvement in them was not anticipated. From a study of all of the cases he arrives at the conclusion that the drug has a decidedly beneficial action upon epileptic paroxysms; that this influence is probably not so great nor so positive as that obtained from the use of antipyrin and the bromides, or even of the mixed bromides; that in those cases in which it is of service it relieves the paroxysms without causing other unpleasant symptoms, such as are sometimes caused by the use of large doses of bromides; and that the dose ordinarily recommended is too small. As much as a teaspoonful or more four times daily is often needed to secure results.

In the treatment of Bravais-Jacksonian epilepsy, Dignat[2] believes that the application of **Circular Blisters** over the course of the aura is of great service. This treatment should be limited to cases of partial

epilepsy, not due to cranial traumatism, cerebral syphilis, or organic lesions of the nerve-centres.

Murray,[3] in a letter to the "Lancet," comments most favourably upon the beneficial influence of **Nitrate of Silver** on epilepsy. He claims that this remedy will cure epilepsy when the bromides have utterly failed; and that a patient who has been subjected to a course of silver, producing a deposit, secures a remarkable immunity from a number of minor nervous ailments, such as neuralgia, gastric uneasiness with nervousness, etc. He believes that the silver is deposited in the nerve-cells, probably as a chloride, and that it so alters their explosive tendency as to arrest the epileptic discharge. He cites two severe cases of epilepsy in support of his views. Both cases were cured, but in both the remedy was pushed until the leaden tint was perceptible in the face. In fact, the writer does not believe that the best effects of the remedy can be obtained unless it is given in large doses, and in such a case the discolouration of the face can hardly fail to occur.

Collins[4] sums up his experience with Flechsig's treatment of epilepsy by **Opium,** and then by **Bromides,** as follows :—

(1,) The plan suggested by Flechsig is not a specific.

(2,) In almost every case there has been a cessation of the fits for a greater or less time.

(3,) A relapse generally occurs in from a few weeks to a few months.

(4,) The frequency of fits after the exhibition of opium is, for the first year at least, lessened more than one-half.

(5,) The attacks occurring after the relapse are much less severe.

(6,) This plan of treatment is particularly valuable in ancient and intractable cases.

(7,) In recent cases of idiopathic epilepsy it cannot be recommended.

(8,) The opium plan of treatment is an important adjunct to the bromide plan, as ordinarily applied.

(9,) The opium acts symptomatically, and merely prepares the way for and enhances the activity of the bromide and other therapeutic measures.

(10,) This plan of treatment permits the use of any other substances which are known to have a beneficial action in epilepsy.

The opium was given in doses of ½ a grain at first, and then gradually increased until about 15 grains a day were given in doses ranging from 1 to 4 grains. The maximum dose was reached at the end of the first week. At the end of six weeks the opium was suddenly stopped, and bromide in ½ drachm doses four times a day

was substituted. After these large doses had been taken for some time the quantity was gradually decreased until less than 2 scruples a day were given.

The famous "Brown-Séquard prescription" for epilepsy is as follows[5]:—

℞ Potassii Iodidi Potassii Bromidi, āā 8 parts	Ammonii Bromidi 4 parts Potassii Bicarb. 5 parts Infus. Calumbæ 360 parts

Misce. Sig.—1 teaspoonful before meals, and 3 dessertspoonfuls on retiring; with careful attention to the diet.

Bekhtereff[6] recommends the combination of **Caffeine** and **Adonis Vernalis** with bromide. He usually employs the following solution: Leaves of adonis vernalis, from 30 to 50 grains; boiling water, 5½ ounces. After this has been filtered, the following are added: Potassium bromide, from 114 to 170 grains; caffeine, from 2 to 3 grains. From 4 to 8 teaspoonfuls are to be taken every day in water or in sweetened milk. The author has not yet met with a single case of epilepsy in which the disease proved absolutely refractory to this medication.

Boyer[7] reports thirteen cases of epilepsy treated by **Trional.** In ten cases there was a marked decrease in the number of attacks, and the physical symptoms also were singularly improved.

Peterson[8] has not found solanum of any value; he considers the Flechsig treatment serviceable in a small proportion of the advanced cases; he has seen benefit derived from a combination of adonis vernalis and bromides, but has observed most excellent results from **Thyroid Extract.**

He advises surgical treatment only in traumatic cases, and here, he says, we may reasonably expect a cure in four out of every hundred cases.

REFERENCES.—[1] "Amer. Journ. Med. Sci.," March, 1896; [2] Ibid., March, 1896; [3] "Therap. Gaz.," Jan. 15, 1896; [4] "Brit. Med. Journ.," Jan., 1896; [5] "Pract.," Jan., 1896; [6] "New York Med. Journ.," Jan. 18, 1896; [7] Ibid., March 28, 1896; [8] "Philadelphia Polyclinic," Aug. 8, 1896.

EPIPHYSES (Separation of). *Priestley Leech, M.D., F.R.C.S.*

Operative Treatment.—Separation of the lower epiphysis of the femur has been seen on two occasions by McBurney,[1] of New York, and in both cases an operation was necessary to reduce the deformity. In this injury the appearance of the limb is somewhat similar to that in which dislocation at the knee has occurred—the location of the false point of motion should define the differential diagnosis. It is, however, more difficult to decide as to whether the separation is one purely

through the conjugal cartilage, or whether a very low fracture of the femur has taken place. In the latter instance rough bony crepitus should determine the existence of true fracture, in cases where reduction can be made.

In both the cases reported, reduction under an anæsthetic was impossible. An incision about five inches long was made on the outer side of the limb, beginning just below the projecting angle of the lower end of the shaft. The incision passed vertically upwards. The soft parts were divided down to the bone and the lower end of the shaft of the femur was exposed. It was quite bare, the periosteum having been stripped up from its face for several inches. The epiphysis was then exposed; it lay quite anterior to the lower end of the diaphysis, markedly to the inner side. Even now some difficulty in reduction was experienced, and McBurney only succeeded when powerful extension was practised; and at the same time with the aid of a periosteal elevator the posterior lip of the epiphysis was pushed over the anterior edge of the shaft.

After reduction, no difficulty existed in maintaining the epiphysis in place when the leg was partially flexed. In both cases the result was good; in the younger patient the result was perfect in every way; in the other, voluntary flexion at present is limited just after the right angle is passed.

REFERENCES.—[1] "Annals of Surgery," May, 1896.

EPISCLERITIS. *G. E. de Schweinitz, M.D.* / *Clarence A. Veasey, M.D.* } *Philadelphia.*

Dr. D. H. Coover[1] recommends the operation of **Peritomy** in those severe cases of *episcleritis* in which the sclera begins to grow thin and the cornea to become involved, and which have resisted the usual methods of treatment. Only that portion of the sclera is denuded that lies between the inflammatory patch and the cornea, unless the inflammation extends all the way around the cornea, when a complete peritomy is performed.

REFERENCE.—[1] "Ophthalmic Record," May, 1896, p. 419.

EPISCLERITIS PERIODICA FUGAX.

G. E. de Schweinitz, M.D. / *Clarence A. Veasey, M.D.* } *Philadelphia.*

Under the above name Fuchs[1] has recently described a disease that is more or less familiar to all ophthalmic surgeons, and in a more recent communication on the subject Sydney Stevenson[2] discusses it at some length. He says that the affection is characterized by inflammation affecting chiefly the coniunctiva of the eyeball and the

underlying episcleral tissue. It is of a fleeting nature, and individual attacks last from twenty-four hours to eight days. It may affect one or both eyes, is exceedingly prone to recur, and may persist for years. In some cases there is severe photophobia and lachrymation; in other cases these symptoms are almost or altogether absent. Pain was commonly complained of, especially when the eye was moved, or the patient attempted to accommodate. Spasm of the ciliary muscle and pupillary contraction were also noted in some cases. As to etiology, Fuchs believes that in consequence of some abnormality of nutrition, the system becomes loaded with noxious substances, capable of setting up an inflammation. The exciting cause, he thinks, frequently lies in some external condition, such as a change of temperature. It occurs most frequently in middle-aged men, less often in women, and is occasionally seen in children (almost always in the male). The affection, as a rule, is not very serious, but the tendency to recur gives it an importance it would otherwise scarcely merit.

Episcleritis periodica fugax may be confounded with two diseases, namely, ordinary *episcleritis* and *acute catarrhal ophthalmia*. From the first it is distinguished by its rapid course, comparatively slight symptoms, and by the absence of any distinct inflammatory nodules in the sclera. From the last it may be differentiated by the scantiness or absence of secretion, as well as by the localized character of the inflammation. Acute catarrhal ophthalmia moreover is generally bilateral, whereas this form of episcleritis, as a rule, attacks one eye alone.

As to treatment, the pain, redness, and other symptoms are speedily relieved by a brisk **Purge,** followed by the instillation of the solution of **Sulphate of Atropin** (2 grains to the ounce). **Fomentations** also are useful in some cases. The effect of these remedies is greater if the eye be shaded and the patient kept from work. To prevent recurrence, although many remedies have been tried, nothing seems to be of much use. More is to be hoped from a change of air than from any treatment by drugs or local applications.

REFERENCES.—[1] "Brit. Med. Journ.," Oct. 19, 1895; [2] "Med. Press and Circ.," March 18, 1896.

EPISTAXIS. *P. Watson Williams, M.D. Lond. (Bristol).*

In the great majority of cases the bleeding point will be found on examination to be situated on the septum, and usually in the anterior third near the nostril.

It is unnecessary to recapitulate or to describe the many devices for arresting the hæmorrhage which have become classical, but I may

mention that the hæmorrhage in a considerable proportion of cases, those in which the bleeding point is on quite the lower and anterior part of the septum, may be arrested by the simple plan of compressing the nose between the forefinger and thumb.

The causes and treatment of epistaxis have been well epitomized by E. Baumgarten,[1] who records two hundred and fifty cases.

In treatment the aim is not only to stop the bleeding, but to prevent recurrence. This is done by replacing a weakened point with a healthy cicatrix.

(1,) If a patient is not bleeding, but has recently done so, search the inside of the nose with a strong light, and on the fore part of the septum mostly several small red vessels will be seen, indicating the affected spot. If bloody crusts obscure these, gently remove them, and then thoroughly cauterize and destroy the points with a **Galvanic Cautery** or a **Chromic Acid Crystal** on a silver probe.

(2,) If the patient be bleeding, wash out the nostril with hot water, dilate it and introduce a large **Tampon of Carbolized Wool** in front, then compress the ala upon it with the finger. Remove the plug shortly to see the bleeding spot, then re-apply a second tampon. Again remove, and cauterization will usually be easy.

(3,) Where the blood traverses the tampon, or flows into the pharynx, wash out with hot water, and pack the whole nasal fossa through a speculum with strips of **Iodoform Gauze,** a finger's breadth in width. When needful to remove, soften them with hot water, and gently draw them out. If there be further bleeding, again pack with strips; but this is seldom necessary. Bellocq's method is far inferior, both in efficacy and comfort to the patient.

Hot Water injected into the nostril by means of a syringe is recommended by H. L. Armstrong.[2] He says that "in the treatment of epistaxis there is probably no remedy which will give such general satisfaction as hot water."

H. F. Gillette,[3] of Cuba, suggests that the use of **Hydrogen Dioxide** with any suitable syringe will be followed by very gratifying results. For several years he has used a teaspoonful or more of the remedy, in full strength, in every case of epistaxis, with immediate relief. In operations in the nasal cavity, when bleeding obscures the vision, he recommends that we should inject the remedy, and ask the patient to blow the nose, and the field is clear again.

Cozzalino[4] advises, that after cocainization, a 3 per cent. solution of **Trichloracetic Acid** should be applied on a sound wrapped with cotton wool.

REFERENCES.—[1] "Revue internat. de rhinol. d'otol. et de laryn-

PLATE VI.

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gol.," Aug. 10, 1894, and Epit. "Brit. Med. Journ.," Nov. 10, 1894; [2]"New York Med. Journ.," Nov. 16, 1895; [3]Ibid., Nov. 30, 1895; [4]"Journ. de méd. de Paris," and "New York Med. Journ.," Dec. 28, 1895.

EPITHELIOMA. (See "Cancer.")

ERYSIPELAS. *P. G. Unna, M.D., Hamburg.*
Norman Walker, M.D., Edinburgh.

Dr. Chantemesse[1] treated a number of cases of erysipelas with **Serum** prepared by Dr. Marmorek at the Pasteur Institute. The percentage of deaths was reduced to 1·7, and, later, still further to 1·3. The total number of cases treated was five hundred and one, and there was a total mortality of 2½ per cent.

Gonin[2] reports the case of a male, aged fifty, with temperature 104·5. The erysipelas affected the face. The patient was excited and delirious. After the injection of 5 c.m. of Marmorek's serum the temperature fell to 101·1, next day to 97·8, when a second injection was made: a week afterwards the patient resumed work.

Köster[3] reports on one hundred and thirty cases of erysipelas which he had treated with **Vaseline.** He remarks that the vaseline neither shortens the duration of the disease, nor prevents it from spreading, but it has advantages over lead lotion, iodine paint, or sublimate lanolin, in being inodorous, non-toxic, non-caustic, and extremely cheap. Köster considers that the treatment of erysipelas depends more upon attending to the general condition than on anything else.

REFERENCES.—[1]"Brit. Med. Journ.," Jan. 11, 1896; [2]"Lyon méd.," Feb. 23, 1896; [3]"Therap. Monat.," June, 1896.

ERYTHEMA IRIS. *Norman Walker, M.D., Edinburgh.*

The coloured drawing *(Plate VI)* is an illustration of one of the more common of the rarer diseases. The patient, a girl of twenty-two, had suffered from the affection for nearly a year. This is an unusual duration for the affection, which usually runs its course in a few weeks.

Various stages of the malady are seen: one of the spots showing erythema, swelling and the suggestion of a bulla; another showing the exudation escaped from the meshes of the corium, and forming a bulla on the surface; another this bulla dried up into a scab, and the spot extending in rings; while several discoloured patches on the arm indicate the site of previous spots.

The nature of erythema iris is by no means clear. That it is due to some poison circulating in the blood is extremely likely, but it does not show the same direct connection with rheumatism as is so frequently found in cases of erythema nodosum. Still, the **Salicylates**

are, in many cases, most useful in this form of the disease; indeed, they and **Quinine** are the remedies which have proved of most service. The patient lived in the neighbourhood of a well-known sulphur spring, and had taken the waters, but without any benefit.

The drawing is of use in that it clearly shows the error of calling all diseases of the skin associated with bullæ, pemphigus. It is true that at the stage shown in the drawing it is hardly possible to confuse the two diseases, but sometimes the bullæ are larger in proportion, and the mistake is certainly not infrequently made.

Erythema Multiforme.—At the International Congress last August, Veiel stated that in his opinion erythema exudativum multiforme was a distinct infectious disease, and should be clearly distinguished from erythema nodosum. He considered that erythema multiforme was in no way connected with gout or rheumatism.

Stephen Mackenzie, who followed, took the opposite view, and upheld the close relationship between many of the forms of erythema multiforme and rheumatism. His statistics showed four females to one male, and most cases in young adult life. Nineteen out of fifty-four cases of erythema multiforme showed evidence of acute or subacute rheumatism. If the less distinct rheumatic lesions are included, about 50 per cent. of the cases are associated with rheumatism. He expressed the opinion "that the frequency of the association is so strong that an attack of erythema multiforme, though unattended by articular rheumatism, justifies the suspicion that it is rheumatic."

ESTLANDER'S OPERATION (Arrest of Hæmorrhage in).

Priestley Leech, M.D., F.R.C.S.

Mr. Whiteford[1] recommends the following method of preventing any great loss of blood in this operation. After exposure of the thoracic wall, the intercostal arteries are compressed by ligatures on each side of the piece of ribs to be removed. An aneurysm needle is passed unthreaded from the middle of one intercostal space, entering the pleural cavity to the space above, and brought out close to the upper border of the rib above. The needle is then threaded and withdrawn. The ligature when tied contains below the rib a bunch of intercostal muscle, which acts as a plug in the intercostal groove, thereby obliterating the vessels.

REFERENCE.—[1] "Lancet," March 7, 1896.

EXOPHTHALMIC GOITRE. *Græme M. Hammond, M.D., New York.*

Maude,[1] of London, reports four cases of this disease which were greatly improved after the continual administration of the extract of

the **Thymus Gland.** It was given in doses varying from 15 grains twice a day to 45 grains a day. In none of the cases was the goitre diminished, but in all the strength was improved, the tremor disappeared, and the excessive heart action was considerably diminished.

Starr,[2] in his article on this subject accepts the view that the symptoms of the disease depend upon an excess of thyroid juice either of normal or abnormal character, circulating in the blood and acting directly upon the vaso-motor and nervous systems, and upon the muscles. He offers no explanation of why this hyper-secretion of the gland occurs other than that it probably depends upon some abnormality of the central nervous system. He contrasts the disease with myxœdema and demonstrates very conclusively that thyroid extract, which is so serviceable in the latter affection, should not be administered in the former. In severe and intractable cases in which rest-cure and medicinal treatment have failed to relieve, he advocates extirpation of at least part of the thyroid gland.

On the other hand, Liley[3] reports a case in opposition to these views, which was practically cured by **Thyroid Tablets.** The circumference of the neck was reduced, the cardiac murmur disappeared and the trembling became almost imperceptible. Ewald agrees with the writer that thyroid extract occasionally accomplished a great deal of good, but claims that it exerts an unfavourable action in the majority of cases. (See also "Goitre," and "Graves's Disease.")

REFERENCES.—[1] "Lancet," July 18, 1896; [2] "Braithwaite," June, 1896; [3] Ibid., June, 1896.

EYE (Diseases of). (See "Blepharitis," "Conjunctivitis," "Episcleritis," "Glaucoma," "Hæmorrhage (Intra-Ocular)," "Iritis," "Lachrymal Passages," "Myopia," "Ophthalmia Neonatorum," "Optic Nerve," "Ptosis," "Retina," "Strabismus," "Styes," "Ulcers of the Cornea," and "Wounds of the Eye.")

EYELIDS. (See "Burns of the Eyelids," also "Episcleritis.")

FAVUS. *P. G. Unna, M.D., Hamburg.*
Norman Walker, M.D., Edinburgh.

Khrenitchek claims to have treated favus successfully in eleven consecutive cases in the following manner: The head is thoroughly cleansed with **Potash Soap,** shaved, and the following mixture freely applied: **Carbolic Acid** and **Balsam of Peru,** āā 10; **Petroleum** and **Glycerine,** āā 100.

FEVERS, Etc. (Period of Incubation). (See also "Malaria.")

F. de Havilland Hall, M.D., F.R.C.P.

It is so important for the general practitioner that he should be prepared at a moment's notice to state the usual period of incubation of the specific infectious diseases, that the following table may be found of service. It is based on the exhaustive investigation of the committee appointed by the Clinical Society.[1] For all practical purposes these diseases may be divided into two groups, *viz.*, those having a long period of incubation and those with a short one.

In the following table is given, in days, the usual, the shortest, and the longest period of incubation.

PERIOD OF INCUBATION.

I.—THE LONG GROUP.	Usual.	Shortest.	Longest.
Mumps	21	14	25
German Measles	18	5	21
Enteric Fever	12 to 14	5	23
Typhus	12 to 14	2	21
Varicella	14	13	19
Variola	12	9	15
Measles	10	4	14
II.—THE SHORT GROUP		Less than	
Scarlet Fever	1 to 3	24 hours	8
Erysipelas	1 to 4	,,	?
Diphtheria	2 to 4	Few hours	7
Influenza	3 or 4	One day	4 or 5

REFERENCE.—[1] "Clin. Soc. Trans.," Supplement to vol. xxv.

FINGER (Clasp-knife). *Priestley Leech, M.D., F.R.C.S.*

This affection, which is known in France as "*Doigt à ressort*," and in Germany as "*Schnellende Finger*," has received some attention lately.

Duplay[1] reports a case in which the thumb was affected. An incision showed that the sheath of the flexor tendons was much thickened opposite the metacarpo-phalangeal joint of the thumb; the sheath was opened but the tendons were normal. A portion of the excised sheath simply showed hypertrophy of the fibrous tissue. The opening in the sheath was left unsutured and the wound sewn up. A perfect recovery ensued.

Büdinger[2] describes another case, the result of an accident; flexion of the thumb was perfect but caused the appearance of a swelling at the base of the first phalanx. Incision revealed that the cause of

the affection was a concertina-like folding up of the tendon sheath, and this folding caught the tendon so that a sharp pull was necessary to release it. Flexion in this case was normal, and only extension was interfered with. An open operation appears to be the best treatment.

REFERENCES.—[1] "Gaz. des hôpitaux," No. 44, 1896; [2] "Uren. klin. Woch.," May 21, 1896.

FISSURE OF RECTUM, AND PAINFUL IRRITABLE ULCER.

Herbert William Allingham, F.R.C.S. Eng.

For the relief of painful anal fissure, Dr. Adler[1] has recommended an ointment of **Extract of Hemlock**, 5 grammes; **Castor Oil**, 15 grammes; **Lanoline**, 30 grammes; to be applied to the parts after each action of the bowels.

Mr. Beach[2] has used the **Electro-cautery** for rectal ulcer, applying the cautery over the entire surface of the ulcer. Three applications (which were attended by little pain) cured a case which had not been relieved by division of the sphincter.

REFERENCES.—[1] Quoted in "Indian Med. Chir. Rev.," April, 1896; [2] "Mathews' Med. Quart.," Jan., 1896.

FISTULA (in Ano). *Herbert William Allingham, F.R.C.S. Eng.*

In cases of fistula where the sinuses are confined to the lower inch or so of the bowel, Dr. Adler[1] has practised with some success Dr. Lange's method of treatment, which is analogous to Mr. Pitts', that we referred to in the last issue of the "Medical Annual," and consists in the excision of the entire fistulous track and the apposition of the wound by buried sutures of catgut, in order to secure healing by first intention. In our own opinion it is exceedingly difficult to prevent flatus or fæces from finding their way between the united edges of the wound; and Dr. Adler admits that primary union is not always obtained, but that "the patient will be in the same position as if no attempt had been made to secure it, whereas if healing ensues, the gain is a considerable one." Dr. Adler, instead of excising the entire sinus or sinuses, thoroughly curettes the wall of the incised fistula, removing the edges, if they are at all indolent.

Our own doubts as to the probabilities of obtaining immediate union are shared by Dr. J. Blair Gibbs,[2] who read and published an able paper on operations on fistula, more particularly with regard to the "integrity of the rectum after operation." Various opinions were expressed in the discussion that followed his paper. Its thesis lies in what we are accustomed to term *Incontinence of Fæces*. The following remark is of interest: "I have carefully avoided the use of the terms 'partial control' and 'complete control' of the sphinc-

ters as indicating degrees of comparative efficiency of these muscles. It may be an extreme statement, but, from the standpoint of the patient, partial control signifies nothing more nor less than fæcal incontinence."

With regard to the conjunction of phthisis with fistula, Dr. Gant[3] holds that there are two varieties of tubercular fistulas about the anus —one caused by the local deposit of tubercle bacilli in the rectum; the other non-tubercular, but occurring because of general debility.

Our own classification[4] is (*a*,) Fistula in conjunction with active tuberculosis; (*b*,) Fistula in conjunction with chronic phthisis; (*c*,) Strumous fistula, called by others 'scrofulous phthisis.'

In the first case no attempt can be made at cure, but the suffering should be relieved by an incision into the cavity of the blind internal fistula to allow of the escape of the fæces therein collected. In the second case judicious action is needed, but deep incisions are not required, the sinuses being usually superficial, and the external sphincter should be divided as little as possible. In the third, the fistula must be promptly removed, lest it become the focus of active tuberculosis.

For the palliative treatment of fistula with phthisis, Dr. Charles C. Allison[5] recommends **Guaiacol** in sweet almond oil, for its antipyretic effects; **Iodoformised Ether,** when the fistula cavity is large or the sinuses are multiple; **Creasote,** either internally or by the bowel, for systemic improvement; and **Trional** to induce rest.

REFERENCES.—[1] "Med. News," June 1, 1895; [2] "New York Med. Journ.," March 21, 1896; [3] "Mathews' Med. Quart.," Jan., 1896; [4] Allingham, "Diseases of the Rectum," 6th edition; [5] "Iowa Med. Journ.," 1895.

FLAT-FOOT.

Robert Jones, F.R.C.S., Liverpool.
John Ridlon, M.A., M.D., Chicago.

The term flat-foot is applied to feet lacking the normal arch, either as a congenital defect or a pathological condition. It embraces what has been termed "persistent abduction" of the foot by Whitman, and probably also should include what has been termed "non-deforming club-foot" by Shäffer, in which the painful condition of the foot is relieved by stretching the plantar flexor muscles. Whitman regards flat-foot as the typical exemplification of the weak foot, and includes in the term "weak foot," not only all flat feet, but all feet that may become flat. The terms "painful flat-foot" and "inflammatory flat-foot" have been used by some of the earlier writers to indicate the acquired pathological condition in contra-distinction to the congenitally flat-feet that are painless and possessed of practically the normal range of movement. Pes planus is the ancient term, now rarely used.

Plate VII.

Fig. A.

Fig. B.

Fig. C.

Fig. D.

Anatomical Changes.—The arch of the normal foot should form an irregular half dome. In the typical flat-foot this arch has disappeared (*Figs. A, B, Plate VII*), the sole rests on the ground in its entirety, the concave inner border has become straight or even convex, the convex outer dorsal border has become flattened or even concave; that portion of the foot anterior to the medio-tarsal joint has become abducted, and the posterior portion everted; it is believed that the heads of the astragalus and scaphoid are partially displaced downwards and inwards, and all the ligamentous and muscular tissues that span or support the arch have become elongated and generally weakened. In certain cases there is inflammatory thickening of the soft parts about the tarsus, and, after prolonged deformity, there will be structural shortening of the abductor and dorsal flexor muscles of the foot.

Causes.—Certain races, notably the American negro, and certain classes, notably the German peasantry, almost universally have flattened feet, but these rarely present any of the symptoms of disability that affect those suffering from pathological flat-foot. It, however, remains to be shown that these peculiarities are really racial, and not due to mal-nutrition, early and heavy work, and the dejection of hopeless lives.

Congenital valgus, a very rare deformity, in which there is a universal antero-posterior shortening of the outer dorsal aspect, and elongation of the inner plantar aspect of the tarsal bones, might be expected to sustain a causative relation to flat-foot at a later period, but its relation has not been conclusively demonstrated.

Certain children are born with feet abnormally shallow on the inner margin; when these children begin to walk they toe in, usually in order to throw the weight on the outer border of the foot. If the feet of these children remain weak, or if from any cause they become weak, as pointed out by Whitman, they are specially predisposed to the development of flat-foot. On the other hand, we are convinced that this same foot, if it develops good strength and remains strong, becomes the typical high arched foot. The high arched foot becomes painful if flat-foot develops, while the valgoid foot is rarely a cause of suffering.

A moderate degree of flat-foot is found in a few children and adolescents, in whom the distance from the tip of the inner malleolus to the sole is greater than normal, and is associated with a lax internal lateral ligament of the ankle-joint. This condition is rarely painful.

In young children the chief cause of flat-foot is rickets. When rickets results in knock-knee (*Figs. G, H, Plate VIII*), and the feet are separated by the deformity, excess of weight is brought to bear on the

arch, and it usually yields. When the rachitic deformity is a forward bowing of the tibia, the sabre- or razor-shin, the weight is thrown unusually far forward, and again the arch yields. When the deformity is an outward bowing of the tibia, the foot is everted in order to properly rest on the ground, and this eversion usually weakens and flattens it. Flat-foot due to rickets is rarely painful.

In adolescents flat-foot is found in flabby girls, arising apparently from muscular weakness. This is rarely painful. It is found in over-fat boys or girls apparently due to excessive weight bearing. It is found in boys who work long hours, and carry heavy baskets, and in the pale-faced baker boys who work long hours at night in the damp cellars of many city bakeries. Among adults we find flat-foot especially among waiters, apparently due to long hours of standing; among cooks, who stand long hours, and are often over-weight; and among barmen, who stand long hours often on a damp floor, and are frequently flabby from excessive drinking. Flat-foot is seen also in women weakened by child-bearing, especially if associated with over-weight, and, indeed, in any case where excessive weight is found associated with flabby muscular development or muscular degeneration.

The traumatism of a slight sprain resulting from jumping down a few feet is often the starting point of painful flat-foot, as may a long walk in one unaccustomed to such exercise (*Fig. I, Plate VIII*). The lifting of heavy weights in feats of strength by professional athletes, who oftentimes develop all muscles except those of the feet and those that control the movements of the feet, and the carrying of weights, such as kegs and barrels of beer, are causative factors in the production of flat-foot. On the other hand, ballet-girls are often seen to walk and stand with feet abducted and flat upon the floor, the flatness being apparent only, the arch being filled with an excessive muscular development, and the abduction due to unusual mobility and habit from training by the dancing master, who always insists that the pupils turn the toes well out. Were not dancing an admirable exercise for the development of the muscles that help to support the arch of the foot, the persistent teaching of the masters to turn out the toes would prove a most pernicious cause of flat-foot. As in-toeing is an evidence of weakness, and an attempt on the part of the individual to compensate for that weakness by posture, so out-toeing is an evidence of weakness, and also of indifference as to compensation, or of failure in gaining compensation. The habit of adduction protects a weak foot, while the habit of abduction weakens the foot, and may cause a flattening of the arch. Thick-soled shoes, especially if thick and stiff in the shank, limit motion in the foot, and thereby weaken it.

Fig. E.

Fig. F.

Fig. G.

Fig. H.

Fig. I.

Abduction of the great toe weakens the arch of the foot, and is a very important causative factor in weak-foot and flat-foot. Abduction of the great toe arises often from short and narrow-toed stockings, and from shoes of the absurd and fantastic fashionable shapes, which not only forcibly abduct the great toe, but allow not sufficient room for any voluntary movement of any of the toes.

Acute rheumatism, gout, and the so-called "rheumatic gout," may weaken the foot, and in that way predispose to flat foot.

Flat-foot often accompanies the eversion of foot due to badly reduced Pott's fracture, and can only be treated conjointly with the mal-union (*Figs. C, D, Plate VII*).

Symptoms.—The foot may, or may not be flat; it is always more or less abducted, and usually everted or pronated. Voluntary motion in cases at all severe is more or less restricted, and may be wholly absent at the medio-tarsal joint, and greatly limited at the ankle-joint. Tenderness, as a rule, first appears beneath the posterior half of the os calcis, and later over the inner aspect of the scaphoid. Pain is also felt over the deltoid ligament, and in badly everted cases at the point where the external malleolus is forced on the os calcis. This latter pressure is often modified by the formation of a bursa. Pain is usually at first only a strained feeling situated deep in the arch of the foot, but later on it becomes a real pain. The skin is often cold and clammy, and passive abduction of the foot is resisted and painful; often plantar flexion is also resisted and painful. The patient stands with feet abducted and everted, and walks without spring, as if his feet were blocks of wood. When the foot has become completely flat, the pain and tenderness and the restriction of motion due to muscular spasm disappear; only the flattened arch, the eversion and abduction, remain. As Whitman so well says: "The symptoms of flat-foot do not result because the foot is flat, but because it is becoming flat." In congenital, rhachitic, and paralytic cases, there is rarely pain, tenderness, or restriction to motion; the only symptom is the deformity.

It is interesting to note that in quite a number of early flat-feet, especially in those cases of collapsing high arches accompanied by pain, a common symptom is inversion of the foot; in fact, the surgeon may be consulted because of pain, and an excessive wearing of the outer side of the boot. This is due to an unconscious effort on the part of the patient to prevent the tarsal arch from yielding, and is effected by over-action of the tibiales. If such a case be made to stand barefooted for a time, the foot may be seen, so to speak, to clutch the ground, the toes being contracted, and the foot inverted. If asked

to stand on one leg, the struggle is soon over, and the foot becomes everted, showing the marked symptoms of valgus.

In most well-marked cases of flat-foot abduction occurs at the mid-tarsal joint; in some instances, however, we have noted abduction. The abduction is exaggerated in extent in osseous cases by the displacement and prominence of the scaphoid. The most painful flat-feet are those in which a high arch gives way.

There is a type of spasmodic valgus to which but scant attention has been paid, and yet it is by no means uncommon. One of the authors has operated upon over thirty such cases in less than eighteen months. They are easily diagnosed, as they present prominent symptoms. The foot is everted, the arch has generally fallen, and very often a casual examination would pronounce marked bony changes. Considerable pain is complained of, and walking is awkwardly accomplished. If the patient's foot be grasped, the the peronei tendons are immediately on guard, and stand out a thick cord to the back of the fibula (*Fig. F, Plate VIII*). The foot feels absolutely rigid, and cannot be inverted by moderate force. The astragalus point lies well to the outside of Meyer's triangle. If the surgeon, however, grasps the foot, and at the same time engages the patient in conversation, by the exercise of sudden and severe force (*Fig. E, Plate VIII*), the foot may be inverted, and the perineal spasm overcome, only to return immediately on the release of the foot. The special treatment for this condition will be referred to later.

Prognosis.—Fortunately the prognosis of these cases is good, for, as a rule, they have experienced such various diagnoses, and so many unsuccessful plans of treatment, that they have become utterly hopeless. We do not think we are exaggerating when we say that all pain and disability can be relieved, and all deformity corrected. A permanent cure, in the sense of being able to put aside foot-plates and properly packed shoes, can be usually attained if the patient can be kept sufficiently long under treatment. The treatment aims firstly, to correct any deformity that may exist; secondly, to regain normal voluntary motion; and thirdly, to regain normal muscular strength, or, at least, to develop sufficient strength to retain the normal position and motion. In the beginning, in many cases, no deformity exists, or, at least, none exists that cannot be voluntarily rectified by the patient. That is to say, there is no breaking down of the arch, and no displacement of the tarsal bones, although the foot, as a whole, may be held habitually abducted and everted. In other cases, where the arch has been flattened from early childhood—such feet as are often associated with rhachitic deformities of the bones of the legs—

there is present the characteristic deformity in its entirety; but the foot is in no wise rigid, and the deformity can, to a very great extent, be overcome. In more advanced cases a considerable degree of rigidity is present, and any attempt towards abduction, inversion and restoration of the arch, is met with muscular antagonism, and considerable complaints of pain. We are accustomed to correct the deformity in such cases by sitting opposite the patient, grasping the heel in one hand, the thick proximal part of the hand resting against the hollow of the sole and inner side of the foot, while the other hand grasps the front portion of the foot; then, with the foot in the hands, and the hands between the knees, much force can be brought to bear, to correct the deformity. In the case of very rigid and very tender feet, it may be necessary to administer an anæsthetic, and make use of the club-foot wrench, in order to restore the arch, and regain normal mobility.

In all cases where there is any tenderness on attempting to restore the foot to its normal shape and relations, or any muscular spasm, restricting free movements in all directions, it may be necessary to fix the foot in the position of adduction and inversion. The patient should be kept in bed until the extreme sensitiveness has subsided.

When motion is normal in all directions, the next stage of the treatment may be entered upon. In those early cases, where no lowering of the arch has taken place, and only abduction and eversion, with some pain, are present, and where normal motion is possible, the only treatment necessary may be elevation of the inner side of the heel, with instruction as to posture and use.

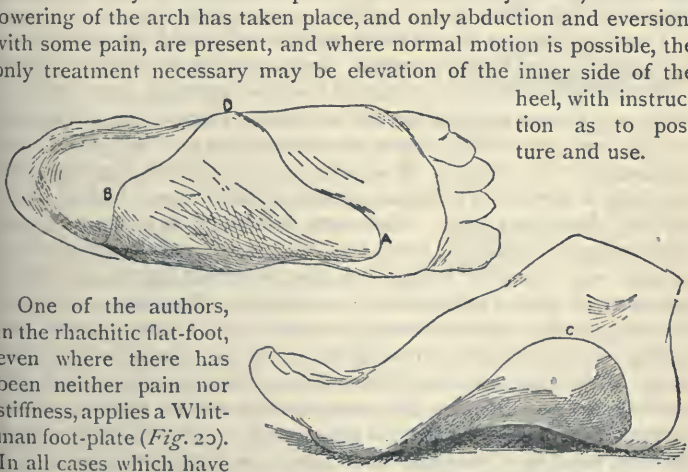

Fig. 20.—The Whitman foot-plate.

One of the authors, in the rhachitic flat-foot, even where there has been neither pain nor stiffness, applies a Whitman foot-plate (*Fig.* 20). In all cases which have needed a plaster dressing he applies the Whitman foot-plate. In all cases instructions in

posture and exercises are imperatively necessary. A properly shaped shoe is essential to the treatment of all cases.

In using plaster of Paris, the splint should reach from the base of the toes to the garter line below the knee, and the thickest part should be at the narrow part of the ankle. The plaster bandages are best put on over a smoothly fitting stocking; in lieu of this, the foot and leg may be bandaged with sheet-wadding. Covering the part with absorbent cotton, as is often done, results in an ungainly, ill-fitting splint, with a rough and uneven inner surface, that is likely to prove irritating, in spite of the cotton wadding.

To make a plaster case, preliminary to making a Whitman foot-plate, it is convenient to pour a thick plaster cream upon a square of thick unbleached cotton cloth, and then, with the foot in the desired position, quickly work it around the sole and the two sides of the foot as high as the malleoli, holding it there until it sets. If the patient sits with the outer aspect of the ankle of the affected foot resting upon the opposite knee so that the outer side of the foot looks towards the floor, it will be found to be a comfortable position for both patient and operator. When the plaster has set it can be deeply creased lengthwise the middle of the sole with a blunt knife and readily separated in halves, or the shell can be made in two parts by taking the outer side and half the sole first, and then the inner side and remaining half of the sole.

The inner surface of two parts of the shell should be rubbed over with vaseline and bound together. Into this form thick plaster cream is poured, which results in a case of the foot, complete in so far as is necessary for the shaping of the foot-plate. The dorsum of the case having been pared off so that it can be held in a vice, it is sent to the ironfounder, who, using it as a pattern, casts an iron duplicate, and this, held in a vice, the workman uses as an anvil upon which to shape the hot sheet steel plate. The sheet steel used is 18 to 20 gauge. After being accurately shaped, it is tempered, polished, and finished in some way to prevent rusting. It may be nickel-plated, galvanized, japanned, or coated with rubber or celluloid. The most convenient covering at the present time is covering with bicycle enamel and baking. This plate is worn inside the stocking. The principle of the action of the foot-plate is to fit the foot accurately when it is in the normal position, to grasp the foot laterally and to hold it, and to present three bearing points to the ground, one at the inner side of the heel, another at the back of the great toe joint, these being on a lower level than the third, which is to the back of the tarso-metatarsal articulation on the outer border of the sole. In walking the first two

points strike the ground first, and as the third one comes down the foot is rolled slightly inward.

The shoe should be so constructed that the outline of the sole should conform to the outline of the normal foot when weight is borne upon it. That is to say, the sole of the shoe should be as broad as the sole of the foot, and it should be sufficiently long and loose at the front part to allow of free motion of the toes, and not to crowd the great toe outwards.

In the normal foot, a line drawn longitudinally through the middle of the great toe and the metatarso-phalangeal articulation of that toe should, being extended, pass through the middle of the heel. Crowding the great toe outwards into the position of hallux valgus carries this above-mentioned line to the inner side of the heel, and throws overmuch weight upon the arch of the foot.

In some instances it is necessary to build up the inner side of the shoe in addition to using the sole plate. When the heel of the shoe alone is built up, the thickening slopes gradually to a thin edge at the outer side. This is usually all that is necessary in a properly constructed shoe (*Fig.* 21) in those cases in which a pad is recommended.

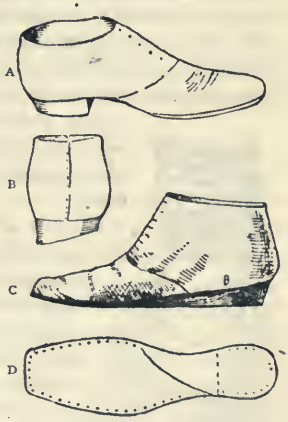

Fig. 21.—A, outside of boot; B, showing slope of heel; C, inside view; D, appearance of shoe from below.

All patients should be instructed in proper walking and standing. They should walk and stand with their feet parallel to each other, instead of forming the angle of a square; that is, the toes should be in front, instead of turned out at the side. Walking thus, the patient must lift himself over his toes at each step, and thus develop the muscles whose function it is to support the arch. In addition, he should exercise daily by raising himself on his toes from twenty to one hundred times when standing in the proper attitude. Bathing the feet in very hot and cold water, massage, and passive exercises may be found of some considerable benefit.

TREATMENT.—In the treatment of flat-foot it should be understood that the object is not to push up the arch of the foot in opposition to the body weight. This would be an extremely painful process. The effort of the surgeon should be directed towards deviating superincumbent weight from the inner to the outer side of the foot. This relieves

the soft structures of the sole from being stretched, and one of the authors directs for this purpose a simple alteration in an ordinary boot, first suggested by Thomas (*Fig.* 21). It aims at elevating the heel on the inner side by about a quarter of an inch, filling up with leather the hollow between heel and sole, and by placing the boot on a flat last, hammering away the convexity within, against which the arch of the foot rests. The bootmaker is instructed to raise the inner side of a low flat heel from an eighth to a quarter of an inch. The heel should slant evenly from the inner to the outer side. The leather filling should be continued from the inner side of the heel to the commencement of the sole, tapering off to minimise its weight. When the patient stands in this boot the foot is necessarily inverted, and pressure is removed from the yielding ligaments of the sole. In cases of flat-foot without aggravated symptoms this fulfils all the indications of mechanical treatment.

In the more aggravated forms of flat-foot it may be necessary to divide the peronei tendons, to wrench the foot, and, after a fortnight's fixation, place the patient in a Thomas shoe, adding an outside iron which reaches from below the knee to the heel, in which it terminates (*Fig.* 22). This gives considerably more power to the surgeon's efforts at inverting the foot.

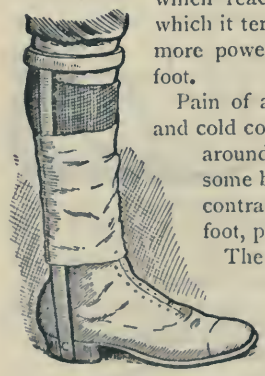

Fig. 22.

Pain of an acute character is best relieved by hot and cold contrast baths, and best prevented by placing around the arch of the foot and above the ankle some bandage or plaster. The contrast baths, by contracting and dilating the small vessels of the foot, provide an excellent tonic treatment.

The treatment found very successful by one of the authors in the case of spasmodic flat-foot consists in anæsthetising the patient (when the spasm quite goes), and making an incision above the outer malleolus over the peroneus longus muscle, exsecting about threequarters of an inch of the tendon, and treating in similar fashion the tendonous portion of the brevis. The foot is then placed for a fortnight in a position of varus, and the patient allowed subsequently to walk with altered boot and side iron. This class of case is very intractable unless treated in this energetic manner, the exsection of tendons being much more effective than their mere division.

In certain cases, where pronounced osseous changes coupled with

pain are present, operative procedures may be demanded. Of operations quite a number are described, but two only need be referred to: (*a*) Resection of the astragalo-scaphoid joint, as advocated by Professor Ogston; and (*b*,) Exsection of a wedge from the head and neck of the astragalus, as recommended by Sir William Stokes. Of the two operations we prefer that of Stokes, as interfering less with normal mobility, and as resulting in a more normal looking foot.

FOOT (Plastic Formation of, and Excision of Tarsal Bones). (See "Amputations.")

FRACTURES. (See also "Patella, Fractures of.")

Priestley Leech, M.D., F.R.C.S.

The operative treatment of simple fracture was discussed at the French Congress of Surgery, and Berger[1] pointed out that operative treatment had only been proposed in fracture of the clavicle and of the leg. In the case of the clavicle, operation was only justified where there are vascular or nerve lesions, for operation cannot prevent the formation of callus, and the results obtained by the usual treatment are as a rule very good.

Fractures of the Clavicle.—Routier[2] says that most cases are best treated by bandaging, etc., but in cases where there is risk of subsequent deformity or the displacement is sufficient to cause unsightliness or to interfere with the innervation of the upper extremity, operation is indicated. He reports a case in a young lady, where there was extreme deformity owing to over-riding of the fragments; the seat of injury was exposed, a detached fragment of bone removed, and the two ends of the fractured bone were sutured. Three weeks after the operation there was perfect union. The linear cicatrix was small and scarcely perceptible, the shoulders were symmetrical, and the patient seemed to be free from the least deformity.

Fractures of the Leg.—For these, especially the oblique and so-called helicoid forms, no apparatus has yet been devised which will ensure consolidation without shortening. Reduction should be effected progressively and gradually, and not until it has been rendered as complete as possible should any immovable apparatus be applied.

Berger thinks no surgeon is justified in exposing the seat of fracture in a leg with the view of placing the fragments in good position and uniting them by wire suture except in the very exceptional instances of persistent irreducibility due to the interposition of isolated pieces of bone, of bands of ligament, periosteum, or muscle. With regard to articular fractures, only those of the elbow and knee should be subjected to primary intervention on account of the bad

functional results observed after these fractures. It is doubtful whether persistent osseous deformity and restriction of movement in the forearm can be prevented by operation in cases of fracture near the elbow joint. The danger of operative infection of the knee is so great that surgical intervention should not be advised except in cases of exceptionally extreme displacement which has resisted very energetic attempts at reduction. Fractures of the olecranon and patella are excluded.

Fractures near a Joint.—Miller[3] points out that in these cases there is a double injury, viz., a fracture and a sprain of the joint. As a rule the fracture is treated well enough, but the sprain is neglected. Rest alone does not cause ankylosis, but if the sprained joint is put up in plaster for some weeks, it will take as many weeks of massage to make it useful again. The two injuries should be treated simultaneously; rest for the fracture, and massage and movement for the joint and the effusion, etc. First apply proper splints for the co-aptation of the fracture, but the splints should be of such a character that they can be taken down occasionally and massage performed in such a way as to prevent movement of the fractured surfaces. The advantages of this method are: (1,) Complete rest is provided for the union of the fractured bone, except for a few minutes once or twice a week; (2,) Swelling and effusion are got rid of more quickly; (3,) Adhesions are prevented by passive movements (voluntary movement is considered most dangerous in these cases); (4,) Union of the fractured surfaces is probably facilitated by massage; (5,) Time is saved.

It is not always easy to detect crepitus in cases of fracture. Viana[4] has suggested the use of auscultation from an idea of Disfranc's. The procedure is as follows: The stethoscope is applied to the immediate vicinity of the suspected site of the fracture; percussion is then practised close to the stethoscope either by the surgeon or an assistant with a percussion hammer and a plexímeter. If the plexímeter be carried along the axis of the bone, at the moment it passes the place of fracture an abrupt change in the percussion resonance is noted. Viana experimented on eleven cadavers in fractures of the extremities, the skull, and especially the ribs. He considers his method of value in the latter cases.

Every surgeon knows the unfavourable results that so often follow the ordinary treatment of impacted extra capsular fracture of the neck of the femur. Mr. Southam[5] described a case in a male patient twenty-seven years old, where the impaction was broken down and perfect union without deformity resulted. He gives[6] the history of

three other cases treated by this method. In each case the fracture united with an abundant formation of callus. The ages of the three patients were fifty, sixty-five, and seventy-five. The results in all were satisfactory, especially as regarded the eversion. The impaction was in each case broken down under anæsthesia, and in one case it required a good deal of force.

REFERENCES.—[1] "Méd. moderne," Nov. 2, 1895, quoted in "Brit. Med. Journ." Epitome, Dec. 14, 1895; [2] "Indian Lancet," Nov. 1, 1895, quoted from "Rev. d'orthopedie"; [3] "Edin. Med. Journ.," No. cdlxxxiii., p. 211, quoted in "Amer. Med. and Surg. Bull.," Nov. 1, 1895; [4] Gazzetta degli ospitali," No. 63, 1895; "Internat. Journ. of Surg.," Feb. 1, 1896; [5] "Lancet," Nov. 17, 1894; [6] Ibid., Dec. 21, 1895.

FROST-BITE. *P. G. Unna, M.D., Hamburg.*
Norman Walker, M.D., Edinburgh.

Besnier and Brocq [1] recommend bathing the hands in a **Decoction of Walnut Leaves**, then the application of strong **Tincture of Camphor**, followed by dusting with **Salicylate of Bismuth**, 150 grains, **Starch**, 2½ ounces.

Another prescription is [2]:—

℞				
Sozoiodol-potassium	2 parts	Lanolin	7 parts
Vaselin	1 part		

REFERENCES.—[1] "Lyon méd.," Jan. 27, 1896; [2] "Amer. Med. and Surg. Bulletin," Dec. 15, 1895.

GALL-BLADDER. *A. W. Mayo Robson, F.R.C.S.*

Surgical treatment of stones in the common duct. Fenger [1] reports five cases on which he has operated, with one death.

"*Closure* of the wound in the common duct should be accomplished by a double row of sutures: an inner row through the muscular and external coats of the wall of the duct, but not penetrating the mucosa; and an outer row, including or taking in the peritoneum of the anterior wall of the hepatico-duodenal ligament. He usually leaves the sutures long, in order to hold up the wound in the duct during the insertion of the following sutures. The insertion of sutures is easy when the wall of the duct is thickened, but difficult when the wall is thin, as the needle penetrates the mucosa, and bile flows through the needle punctures. The outer row of sutures may stop the flow of bile, but it is sometimes impossible to seal the wound hermetically, however carefully the sutures may be applied. In two of his cases no bile exuded from the wound, but in others, which terminated as favourably, there was a discharge of bile for a limited time—a much shorter time than obtained in the majority of my cases of ordinary cholecystotomy.

"*Drainage* is accomplished by a rubber drainage-tube passed down to the wound in the duct, and gauze-drains are inserted one above and the other below the rubber drainage-tube. When the gall-bladder is opened, and, instead of being closed, is united to the abdominal wall, he drains the gall-bladder by a rubber drain only, and unites the abdominal wall below, so as to separate the drains in the gall-bladder and common duct.

"*Conclusions.*—(1,) In the great majority of cases of stone in the common duct the duct is dilated, and the stone floats in it; (2,) Choledochotomy is the operation of choice, and should be employed whenever applicable, as it is far superior to all other methods of operation; (3,) Choledochotomy is applicable in the vast majority of cases of stone in the common duct; the cases demanding other operative procedures are rare."

Dr. W. E. B. Davis,[2] of Birmingham, Ala., in a paper, alluded to a large number of experiments which he had made on dogs, in which he had tested the value of gauze in draining off bile in injuries of the gall-bladder and ducts. He reported cases where he had removed the gall-bladder without tying the duct by packing with iodoform gauze. The animals had recovered. In other instances, where he had incised the gall-bladder and ducts, and packed with gauze around the openings, no stitches having been used, the animals had recovered. Complete walling off of the general cavity had been noted when the abdomens of the animals had been reopened. A number had been examined at the end of forty-eight hours. Dr. Davis also reported the case of a human subject in which he had removed the gall-bladder and a portion of the cystic duct where there had been obstruction in the common duct, and packed with gauze after introducing a glass drainage-tube, and there had also been complete walling off of the general cavity. He advised that, in cases of obstruction of the common duct, no attempt should be made to suture the opening after the obstruction had been removed, as the patient's condition was nearly always serious, and a prolonged operation would terminate fatally. The obstruction should always be removed, if possible. Dr. Davis's experiments demonstrated conclusively that the peritoneum was capable of taking care of a small amount of bile, but that large quantities, or the constant extravasation of it, would produce a fatal peritonitis, usually in from twenty-four to forty-eight hours. He thought the field of cholecystenterostomy was a very limited one.

In operating for stones impacted in the common ducts, I prefer to crush the concretions between the finger and thumb if they are soft,

but where the force required to crush them is considerable, I employ incision of the duct, closing the duct by a single layer of sutures, draining the gall-bladder, if opened, and also the right renal pouch, employing for this purpose a glass tube, associated with gauze packing.

Ideal cholecystotomy, to my mind, should seldom be performed, not only on account of the greater danger, but because drainage of the gall-bladder and bile ducts is advantageous as a curative measure. The case quoted by Dr. W. Meyer in the "Annals of Surgery," Feb., 1896, shows the advantage of the operation in certain instances, where the gall-bladder is small and cannot be satisfactorily drained, or where omentum is not available to make a barrier to shut out the general peritoneal cavity.

Mr. A. E. Barker,[3] after discussing three cases of operation on the gall-bladder for gall-stones, concludes with the following remarks :—

These cases illustrate one of the most beneficial branches of abdominal surgery. The distress caused by biliary calculi, impacted either in the cystic or common duct, is very great, and the risks of the condition do not need to be insisted upon. The ease with which such calculi can be removed is seen in Cases 1 and 2, and the difficulties and risks in Case 3. Where the gall-bladder can be drawn into the abdominal wound the operation is very easy, and the contents of the bladder can be easily prevented from entering the peritoneum; but where the viscus lies deep, and is immovable, as in Case 3, it is very difficult to prevent this escape. Under such circumstances I have found the method of packing iodoform gauze all round the swelling before incising it most useful. And, finally, if the bladder will not come up to the peritoneum, the latter must be stripped off from the rectus sheath and pressed down to the gall-bladder and stitched to it, as recommended by Mr. Mayo Robson. But even this in some cases is inadequate to shut off the peritoneum completely. In such a case I have found it well to follow the method of the surgeon named, and to draw the omentum into the opening remaining, and to stitch it there to close it. The mode of draining the gall-bladder employed here I first saw put in practice by Dr. Körte, in Berlin. It has the merit of keeping the dressings free from bile, and obviating the necessity of frequent change. It answered admirably in all these cases, and in others in which I have employed it, and saves a great deal of trouble and some risk from frequent dressings. The difficulties encountered in Case 3 were very great, owing to the enlargement of the liver, and the depth and small size of the gall-bladder, as well as the presence of a large quantity of mucus and pus in the dilated ducts. But these

difficulties were overcome with care, and at no time after operation was there any evidence that septic matter had found its way into the peritoneum. As soon as it is seen that the bowels act, and that the motions contain the normal amount of bile, the tube in the gall-bladder can be removed in such cases as the above, and where the proceedings have been as detailed, no biliary fistula results.

Infectious Angeiocholitis and Cholecystitis.—Dr. F. Terrier[4] gives the following as a *résumé* of his method of treatment in these cases:—

(1,) Where the biliary passages are involved, either directly or indirectly, in an inflammatory process, either with or without the presence of calculi, which results in a febrile condition that is intense, either continuously or with marked exacerbations, there is an absolute indication for surgical interference—that is, for a laparotomy.

(2,) This operation should have for its end the opening of the gall-bladder, and the formation of a permanent biliary fistula—that is, a cholecystotomy should be performed.

(3,) By this operation information of the exact condition of the biliary canals is obtained, including the cystic and vesicular ducts and the ductus choledochus, while complete drainage is furnished for the septic bile which fills the ducts and poisons the system.

(4,) This form of drainage provides in a manner that is indirect and mechanical for the issue of the septic bile, and thus for a disinfection of the bile-ducts, which is much better than the pretended medical treatment so often employed.

Pyloric Obstruction from Gall-stones.—Galliard[5] has recently reviewed this subject in an interesting manner. He comments on the rarity of the condition, and the still greater rarity of its appearance at the autopsy table.

He cites several interesting cases where facetted gall-stones had been vomited by the patient, or even passed by way of a stomach-tube.

The mechanism of the obstruction would seem to be variable. In one class of cases the stone or stones ulcerate into the stomach cavity, adhesions having first formed, and then get into and occlude the pylorus.

Again, when adhesions have taken place between the pylorus and the gall-bladder, the former becomes a fixed point, and, as it can no longer recede before a gall-bladder distended with stones, the pyloric lumen can be occluded by their pressure. In another class of cases adhesions form between the gall-bladder and the stomach, and by their innate power of contraction occlude the pylorus. The occlusion may at first be only partial, but, the pylorus being fixed, the gradually

distending stomach drags more and more upon it, and in this manner increases the occlusion.

In a former edition of the "Annual" will be found a reference to cases where I have operated successfully for this condition, the dilated stomach being dependent on pyloric stenosis or on adhesions produced by gall-stones.

Intestinal obstruction from gall stones forms the subject of a paper by Dr. Lobstein,[6] in which he gives two fresh cases, and refers to ninety cases gathered from other sources. Of these, sixty-one were not operated on, thirty-two recovering. Of the thirty-one operated on, twelve recovered; but as the remaining nineteen were many of them operated on when moribund, their death should not be charged to the operation. Operation should not be too long delayed if other means fail to give relief.

REFERENCES.—[1] "Amer. Journ. Med. Sci.," Feb. and March, 1896; [2] "New York Med. Journ.," Oct. 26, 1895; [3] "Lancet," Jan. 25, 1896; [4] "Rev. de chir.," Dec., 1895, and "Amer. Journ. Med. Sci," May, 1896; [5] "Presse médicale," Oct. 5, 1895, and "Amer. Journ. Med. Sci.," Jan., 1896; [6] "Beit. zur klin. Chir.," Bd. xii., Hft. 2.

GANGLION. *Priestley Leech, F.R.C.S.*

TREATMENT.—In last year's "Annual" we drew attention to Duplay's method of treating ganglion by means of the injection of **Tincture of Iodine.** We have since learnt that Mr. Martyn Jordan[1] had advocated a similar method some time ago; a list of twenty-five cases is given in which this method of treatment was pursued with success. The technique is somewhat different from that of Duplay, as the contents of the cyst are evacuated before the iodine is injected, and pressure is applied by means of a pad and bandage. The priority of thus treating ganglion by injection of iodine belongs to Mr. Martyn Jordan.

REFERENCE.—[1] "Lancet," July 29, 1893.

GASSERIAN GANGLION. (See "Nerves, Surgery of the.")

GLANDS (Diseases of). *Priestley Leech, M.D., F.R.C.S.*

Tuberculous Glands.—The treatment of tuberculous glands formed the subject of a discussion at the Annual Meeting of the British Medical Association.[1] Dr. Crawford Renton for some years treated them by general methods until softening had taken place; he then opened by a small incision, scraped well out, and plugged with **Iodoform Gauze.** In 1892 he adopted the plan of excising enlarged glands down to the jugular vein, but he found that in many cases other glands afterwards enlarged and required removal; he has therefore returned to the old plan of waiting until softening has taken place.

Mr. Harold J. Stiles says that unless the various primary sources of infection are treated, recurrence is certain to take place. If the gland has softened and is practically a tuberculous abscess, his treatment is as follows: (1,) Incision large enough to admit the finger; (2,) Thorough scraping with a Volkmann's spoon; (3,) The application of pure liquid carbolic acid to the wall of the cavity; (4,) Stuffing with iodoform worsted.

This worsted is prepared as follows: White double Berlin wool is boiled for twenty minutes, it is then wrung out of a solution of 1 in 1000 perchloride of mercury, then cut into lengths of about eighteen inches, and with carefully disinfected hands it is rubbed in sterilised iodoform, preferably the crystallised variety, previously reduced to a coarse powder.

He claims the following advantages over gauze: (1,) It is softer, more elastic, and more absorbent; (2,) It more readily drains away the blood-stained serum by capillarity; (3,) Every corner of the cavity can be more easily packed by it, and it is more convenient for stuffing sinuses, and can be so easily freshly prepared. Persistent sinuses have seldom been met with after using this method. Should there be a subcutaneous abscess connected with a gland, a large incision should be made to find the opening leading into the deep fascia. In the pre-auricular and post-pharyngeal region caseous and purulent tuberculous adenitis is more troublesome to deal with. For the pre-auricular gland, if no adhesions are present, shelling out is the best treatment. It soon, however, becomes adherent to the parotid gland and the facial nerve, and, if not carefully scraped, injury may be done to both these structures, and in some cases a salivary fistula results. It should be scraped through a very limited incision made at its lower part.

In post-pharyngeal abscesses in children, Stiles thinks that resulting from tuberculous adenitis is the most common in children. There are three ways of opening these abscesses, viz., through the mouth, from the anterior triangle, and by an incision at the posterior edge of the sterno-mastoid (Chiene). The latter is the best, if possible.

With regard to excision, when the disease is localised to the neck in adults excision should be performed. In young children it should be the exception, but the older the child and the more extensive the disease, the more should the operation be recommended. A clear view should be obtained of every structure before it is divided, and a blunt instrument should be used to separate the glands from adherent veins. If one of the glands should be found to have become softened, it should be scraped and rubbed with pure carbolic acid before pro-

ceeding to excise the mass ; in this way infection of the wound may be prevented. For swabbing the wound artificial sponges made of double Berlin wool, cut into small pieces and tied up in thin gauze, are used.

In cases where practically the whole of the anterior and part of the posterior triangle are occupied by a large mass of glands, the operation is more complete and less difficult if the plan, recommended by Cheyne, be adopted. The jugular vein is exposed at the lower part of the anterior triangle and divided between two ligatures. The glands along with the vein can then be easily peeled up from the structures behind, and a needle can easily be passed round the vein at its exit from the skull and tied before detaching the mass.

Accurate apposition of the edges of the wound is best obtained by a continuous suture of horsehair or fine silk; to prevent the turning in of the edges it may be necessary to make a second or return continuous suture introduced superficially and close to the edges.

Stiles thinks that some cases of lymphadenoma are really cases of tuberculous glands.

Cervical Glands. — Starck[2] has investigated this question with results that are worth the attention of those who are responsible for the care of children. His researches were confined to one hundred children who were from three to twelve years of age. After the exclusion of every other cause for enlarged cervical and submaxillary glands, there were 41 per cent. of children in whom the enlargement of the cervical glands could be due to no other cause than dental caries. Carious teeth are also the means by which tubercle bacilli gain an entrance and cause tuberculosis of the cervical glands. In five cases the author proved this, and in two of the cases the tubercle bacilli were found in the teeth.

From this it follows that in operations upon tuberculous glands, carious teeth should also be extracted, as they may prove to be the source of a return.

Parotid Gland.—Mr. Raymond Johnson[3] gives notes of several interesting cases of unusual swelling of the parotid gland. The cases were five in number, and in each case only one parotid was swollen. The gland was tender in some cases, but not in all ; it was hard to the touch and caused discomfort in eating. The ages of the patients varied from fifteen months to thirty-three years. The socia parotidis in one case was affected first, and in several slighter attacks was alone affected.

In some cases pressure on the gland forced out a string of turbid, ropy mucus from Stenson's duct. A probe could be passed along the duct, but no salivary calculus was found in any of the cases.

There was no difficulty in excluding a swelling due to enlarged lymphatic glands; in no case were there any grounds for referring the case to the class of "symptomatic parotitis" or parotid bubo. Mr. Johnson believes that they were examples of swelling of the parotid gland due to interference with the escape of its secretion from inflammation of Stenson's duct.

Similar swellings have been seen in connection with xerostomia or "dry mouth," and Ipscher has seen a similar condition in the submaxillary gland. He suggests passage of a fine probe along the duct, but the induration is likely to persist for some time. Another case is reported by Dr. Cocking.[4]

Extirpation of the Parotid.—Faure[5] recommends resection of the posterior edge of the lower jaw in extirpation of the parotid, and says that unless this be done one cannot be sure that the whole of the gland is removed. The facial paralysis that follows renders the operation suitable only for malignant cases.

The following incisions are recommended: A vertical incision lying in front of the ear and just behind the angle of the jaw, and another incision commencing in the middle of the first incision and running forwards about a finger's breadth below the zygoma. The skin flaps are dissected up; the anterior lower part of the gland is first forced, and then the upper part of the gland; the gland is then turned back towards the neck. The carotid and the temporal must be tied before division. The posterior edge of the ascending ramus is forced from the soft parts; the edge is removed by rongeurs to a depth of 1 cm. beginning about 2 cm. above the angle. Care must be taken not to go too far above, as the base of the condyle may be weakened, and the dental nerve must not be injured. The deeper part of the gland can then be removed, and the vessels can be secured before division as they can be seen.

REFERENCES.—[1] Brit. Med. Journ.," vol. ii., 1896, p. 610; [2] "Beiträge f. klin. Chirurgie," Bd. xvi., Heft 1, quoted in "Central. f. Chir.," 1896, p. 819; [3] "Lancet," April, 1896, p. 1056; [4] Ibid., May 9, 1896; [5] "Gaz. des hôpitaux, 1895, p. 353.

GLAUCOMA.

G. E. de Schweinitz, M.D.
Clarence A. Veasey, M.D. } *Philadelphia.*

So many methods for treating this disease have been advanced by their various advocates, the principal being the treatment by iridectomy, sclerotomy, or by the use of the myotics alone, or combined with some method of operative treatment, that a paper from a clinician of so wide an experience as Schweigger[1] deserves attention. In writing of the comparative value of the above methods he says:

"In most cases in which the result of the iridectomy is unsatisfactory, it is the so-called simple glaucoma, a disease which very frequently is not glaucoma at all, but an affection of the optic nerve with pre-existing physiological excavation. It is exceptional to find cases of true glaucoma in which after iridectomy glaucomatous attacks recur and lead to blindness. When gradual loss of sight occurs after an iridectomy for glaucoma, without distinct glaucomatous attacks, it is proper to assume that an affection of the nerve has developed after the removal of the glaucomatous process, and this naturally may occur in eyes with iridectomy as well as in others.

"Attempts have long been made to replace the iridectomy for glaucoma by some other method. Sclerotomy was first suggested upon the assumption that the important part of the operation lay in the incision at the sclero-corneal margin and not in the excision of the iris. An important argument for sclerotomy consisted in the fact that an iridectomy in itself always produces diminution of vision, depending upon the astigmatism due to the corneal scar. This form of astigmatism, however, is as corrigible with cylindrical glasses as is the congenital form. Sclerotomy, moreover, also produces traumatic astigmatism and likewise reduces vision. The circles of diffusion produced by the astigmatism may be greater and more irregular with an iridectomy, though the difference is not great. Judging from my experience, sclerotomy is an absolutely unreliable operative measure for glaucoma and does not prevent recurrent attacks. Even those who defend the operation of sclerotomy concede that frequent repetitions of the operation are necessary. If, on the other hand, an iridectomy will serve in a single operation, why should we resort in the majority of cases to sclerotomies?

"The latest attempts to replace the iridectomy are with eserin. Slight attacks of glaucoma can be cured with **Eserin** or **Pilocarpin,** a fact as well known as that severe attacks withstand these remedies. To speak of the case in which the attack of glaucoma was removed by eserin as cured, is as correct as to speak of the spontaneous cure of glaucoma because slight attacks frequently disappear of their own accord. Glaucoma can be said to be cured only when the attacks are entirely prevented, and the *only method* by which this is accomplished is iridectomy. It is really very improper to try a palliative measure for years only to avoid using a proved remedy. That eserin may be used for many years with constantly recurring attacks cannot be doubted. In one of my cases nine years passed without the use of any palliative measure before a severe attack occurred in which eserin was without any action, and an iridectomy had to be performed. At

any rate, the patient who is treated with eserin must constantly remain under observation, and at the first appearance of a severe attack the operation must be performed. For it may happen that after several slight attacks a very severe one may occur with immediate danger of blindness. It is more frequent, however, to find that recurrent slight attacks finally lead to blindness, perhaps without the patient being conscious of it. In these cases of very gradual visual impairment central vision remains good for a long time, the field of vision becoming more and more restricted. I have seen cases in which there was fair central vision with a minimal field after the continued use of eserin for years.

"The advice H. Cohn[2] has given to general practitioners, to use eserin as soon as colored halos are observed, necessarily leads to confusion; for the seeing of colored halos, though a very important symptom of glaucoma, is by no means characteristic. The same phenomenon occurs in conjunctival diseases, though not, as Cohn believes, in the cases of marked conjunctival catarrh; it would be much more frequently noticed. It is rather in those cases of chronic conjunctival hyperæmia with very slight secretion that we find it. I have had cases under continued observation in which colored halos have been frequently seen without being able to find any lesion whatever. Attacks during which colored rings are seen are characteristic of glaucoma only when there is at the same time diminution of sight and a steamy cloudiness of the cornea. . . . . The seeing of colored halos, like all other symptoms, is not in itself a proof. We must depend in all cases upon a connected series of signs to make a certain diagnosis of glaucoma. *And when glaucoma has been positively demonstrated, then iridectomy is indicated*, and there is no sense in first losing time in using eserin and finally to perform an iridectomy, when, as Cohn very properly states, the prognosis is much less favourable."

Silex[3] reaches practically the same conclusions, as he has seen many patients postpone operative interference until it was too late to be of benefit because they had employed instillations of eserin. Therefore he advises immediate iridectomy in *inflammatory glaucoma*, using eserin only in exceptional cases, as, for example, in old and decrepid patients. Cohn,[4] on the other hand, recommends the use of eserin in every glaucomatous patient. This, he says, often cures acute attacks and checks chronic attacks. If unsuccessful, then an iridectomy must be performed and the prognosis is only moderately favourable.

For the *severe pain* which accompanies secondary glaucoma and also in those cases "where there is more or less supra-orbital neuralgia when the condition of the eye does not demand surgical interference,"

Dr. T. Y. Sutphen[5] recommends the internal administration of **Salicylate of Soda,** believing it to be almost a specific for its relief. He has also employed it for the pain in acute glaucoma with a decided lessening of its intensity. It is useful whether or not there exists a rheumatic diathesis, and is usually given in 15-grain doses every four hours. Dr. S. D. Risley has seen the same beneficial effect follow the administration of **Biborate of Soda.** Hence it may be the soda and not the salicylic acid that affords the relief. Indovina,[6] who has employed in a number of similar cases Badal's method of **Stretching the External Nasal Nerve,** concludes that it is an excellent palliative measure against the severe pain of glaucoma, and is especially useful in painful absolute glaucoma.

REFERENCES.—[1] "Archives of Ophthalmology," vol. xxv., No. 2; [2] "Berlin. klin. Woch.," 1895, p. 21; [3] "Deutsche. Aerztl. Zeitung," No. 14, 1895; [4] "Berlin. klin. Woch.," No. 21, 1895; [5] "Trans. Amer. Ophthal. Soc.," vol. vii., Part 2; [6] "Arch. di Ottalin.," ii, p. 255.

GOITRE. *P. Watson Williams, M.D. Lond. (Bristol).*

O. Angerer,[1] of Munich, has treated one hundred patients with **Thyroid Extract,** seventy-eight of whom suffered from goitre. He employs the raw sheep's gland finely minced, brought directly from the slaughter-house to the hospital by one of the attendants and there carefully examined, so that any diseased tissue may be at once detected and rejected. He corroborates Lanz's observation as to its early putrefaction, and agrees that many of the toxic phenomena following this exhibition are due to this cause.

Of the seventy-eight cases treated in this way only four or five remained uninfluenced. A few showed such excessive reaction after its use that it had to be discontinued. In the majority the goitre soon showed distinct signs of retrogression. Only the hard fibrous growths remained totally unaffected. In cystic goitres the substance of the gland atrophied around, whilst the cyst remained distended, but seemed to become more superficial, so that its subsequent enucleation was much more simple. The same result occurs in the adenomatous growths, the isolated tumour or knots coming to the surface and being much more distinct than formerly. It is the simple soft goitres that are mainly influenced, and especially those occurring in young people. He also finds that the bleeding in subsequent operations is much less than when thyroid extract had not previously been employed. It could not be denied that one unfortunate result is produced, viz., a certain amount of heart weakness, which becomes very marked during and after the administration of the anæsthetic. Relapses also sometimes occurred after the cessation of the thyroid treatment.

Bruns [2] says that purely cystic bronchocele is not benefited, and in Basedow's disease it is the exception for the goitre to diminish and the rule for the cardiac and nervous system to grow worse, under the administration of thyroid preparations. Nevertheless, there is an extensive field in bronchocele for the application of this treatment, which, including the above forms of tumour, the author has tried in three hundred and fifty cases. He at first gives the fresh glands, and afterwards the English tablets, limiting the dose to half or an entire tablet per day for a child, or not more than two for an adult. Complications were hardly ever caused by these small doses; in three cases only was the heart too sensitive to bear them. Baumann's thyroiodine tried in twenty-four cases did not seem to act so well. About three-fourths of the cases were improved, the tumour and the troubles due to it diminishing. The retrogression of the tumour was complete in a few cases (8 per cent.), but in about one-third it was reduced to an inconsiderable remnant, and caused no trouble; in another third the diminution was not great. The age of the patient is important; the results, best in childhood, are less good in each succeeding decade; the age of the tumour is also important, since time brings degeneration and retrogressive changes; the shorter the existence of the tumour the sooner its reduction. The diminution in size is soon appreciable—in from four to six days—and soon over; in 60 per cent. in a fortnight, in 40 per cent. more in three or four weeks. Though only the simple hyperplastic form of goitre is amenable to thyroid treatment, the results are swift and sure in proper cases. The involution affects exclusively the hyperplastic tissue enveloping and binding together the nodes When the persistent swelling is small the result approaches a complete cure, but any—even a moderate—diminution sufficient to relieve or remove the symptoms of pressure is of extraordinary benefit. In more than three-quarters of the cases the growth recommences from one to two, or occasionally three or four months after the treatment is omitted, but such relapses can be prevented by continuing to give small doses of the thyroid.

The abstractor has had very favourable results in a few cases of simple goitre treated by thyroid gland tablets.

REFERENCES.—[1] "Munch. med. Woch.," Jan. 28, 1896, and "Pract.," March, 1896; [2] "Berl. klin. Woch.," p. 406, 1896, and Epit. "Brit. Med. Journ.," May 30, 1896.

GOITRE (Exophthalmic). (See "Graves's Disease.")

GONORRHŒA (in Women). *Thomas More-Madden, M.D., Dublin.*

The far-reaching gynæcological and obstetric results of gonorrhœa are still not infrequently insufficiently recognized. In the hope, there-

fore, of directing further attention, not only to the importance of these complications, but still more to the timely detection and treatment of the infection whence they originate, I submit the following results of a long clinical experience of various chronic vaginal, cervical, endo-uterine, tubal, and other intra-pelvic complaints thus occasioned that have come under notice in my wards.

The greater prevalence of diseases of this kind in hospital than in private practice, is explicable by the unclean personal habits and neglect of prophylactic treatment too generally observable in the former class of patients. In some of the instances of the kind observed in my hospital the disease was distinctly traceable to the recrudescence, under the stimulus of sexual intercourse, of an infection contracted prior to marriage by the patient's husband and suffered to run on into an ignored chronic, slightly gleety discharge containing those specific and still pathogenically active micro-organisms by which gonorrhœa is communicable. More usually, however, the infection so conveyed is not recognized until its remote consequences are brought under gynæcological observation. Its earlier non-detection in these cases being due, firstly, to the common occurrence of non-specific blennorrhagic discharges from the vulvo-vaginal mucous surfaces as well as to their comparatively lax structure, owing to which it is that, save where the infective virus is exceptionally intense and is chiefly localised in the more sensient tissues of the vestibule and meatus urinarius, women thus infected seldom manifest those evidences of local inflammatory action—scalding in micturition, pain in coitus, glandular complications, febrile disturbances, etc., which generally attend acute gonorrhœa in the male. The differentiation of gonorrhœal from non-specific inflammatory or catarrhal exudations of the female genital mucosa is oftentimes a matter of no little difficulty and importance. In both cases the local condition may give rise to discharges from the mucous membrane of the urethra and bladder as well as from that of the vulvo-vaginal walls, which can only be distinguished with absolute certainty by the recognition of the gonococci of Neisser in the cases that are gonorrhœal. Frequently, however, this test is not practically available, and, further, it is not always reliable, as that gonococcus is by no means invariably accurately distinguishable, at least by immediate microscopic examination or without a process of cultivation from those other micro-organisms with which it might be confounded. The time requisite for the latter or culture test is quite sufficient to preclude its utility, as any help in such cases to the practitioner requiring some immediate guidance as to the necessity for the use

of those germicidal agents on which alone he can rely for the averting of the remote gynæcological consequences of gonorrhœal infection. Under such circumstances, therefore, our judgment should be grounded on the history, the symptoms, and even to some extent on the probabilities of the case, rather than rest, as some suggest it may do, on an exclusive dependence on bacteriological evidences, which in many instances may prove fallacious as a means of diagnosis and useless as an indication in treatment. Moreover, a sufficient approximation to accuracy may generally be arrived at without any microscopic examination. Thus, for instance, if a vulvo-vaginal exudation be distinctly muco-purulent in character, attended by well-marked localised inflammatory action, hyperæmic tumefaction, and tenderness in the vicinity of the meatus urinarius with a peculiarly viscid discharge therefrom and dysuria, there can be little question of the expediency of treating the case as one arising from gonorrhœal infection. At the same time we would not be justified on such evidence in formulating any *ex cathedrâ* diagnostic pronouncement. For, as I need scarcely reiterate, in cases of this kind, in which, as sometimes happens, our patients' domestic happiness as well as physical health may be involved, our opinions should not only be very carefully weighed, but also, above all, they should always be expressed with the utmost possible caution.

The consequences of unchecked extension of gonorrhœal infection from the vulva to the adjacent parts can here be only very briefly glanced at. In the first place, as the disease progresses, the calibre of the genital passage soon becomes sensibly diminished by the congestive hypertrophy of its specifically irritated lining membrane and by the accompanying hyperæmic condition of the sub-mucous tissues. The vaginal surface may now be found bathed in a more or less profuse mucoid or muco-purulent discharge containing gonococci, by which the disease is ere long carried from the roof of the vaginal vault to the contiguous mucosa of the vaginal portion of the cervix and thence to the endometrium of its canal. The results of this now become evinced in the causation of many cases of dysmenorrhœa and sterility, which in some instances are obviously due to the spread of the gonorrhœal inflammatory action from the muciparous follicles or glandulæ Nabothi to the underlying structures of the cervix and the consequent occlusion or impaired patency of its duct by plastic exudations. Of still greater importance in this connexion are the immediate pathological effects of the specific contamination of the cervical mucoid secretions occasioned by gonorrhœa. Under normal circumstances the crystalline mucus acts as the lubricant of the canal and as

a protection in the intervals of the catamenia against the admission of germs to the uterine cavity, whilst at the same time serving as a suitable medium for the transmission of spermatozoa and also as a seal to its orifice during pregnancy. When, however, that secretion becomes greatly abnormal or infected by gonococci not only are these functions necessarily impaired, but, moreover, the pathological discharge becomes a direct source of irritation or erosion of the cervix, as well as of dysmenorrhœa, and, above all, of sterility. The latter result is consequent on the destruction of the spermatozoa by the infective micro-organisms then contained in the cervical mucus. This view has been sufficiently confirmed by my experience of many instances in which the cure of sterility as well as of its immediate gonorrhœal cause has been effected by thorough **Curettage** of the cervical canal followed by the local application of germicidal agents and the use of **Salol Bougies.** If the infectious disease be not thus arrested before it has passed the cervical zone its results, as I have elsewhere shown,* are evinced in the causation of a large proportion of the cases of chronic endometritis that come under our notice. Of still graver pathological importance is the further extension of gonorrhœa beyond the endometrium and the consequent induction of various tubal, ovarian, or other intra-pelvic lesions.

The diagnosis of gonorrhœal from other forms of chronic salpingitis, as well as that of the consequent tubal collections must rest as largely on the history and general symptoms of each case as on the bacteriological evidence which in some instances may be afforded by the detection of gonococci in the accompanying cervical or vaginal discharges. Of the earlier symptoms of gonorrhœal, as well as of non-specific, salpingitis, probably the most constant are the persistent recurrence of otherwise inexplicable attacks of menorrhagia and metrorrhagia, associated with dysmenorrhœa in the intervals, between which attacks a deep-seated acute or lancinating intra-pelvic pain, shooting out into the sacral and inguinal regions or extending down the thighs, is generally complained of. As the disease goes on evidences of pyrexial disturbance, sudden alternations of temperature, a spiky clinical chart, and pyogenic rigors become observable, and are often attended with intra-menstrual hæmorrhagic or watery mucoid discharges from the uterus, whilst a little later local tumefaction and tenderness, discoverable by conjoint recto-abdominal exploration, in the course of the oviduct may disclose the existence of pent-up purulent or serous

* *Vide* "Clinical Gynæcology: a Handbook of Diseases of Women." London and Philadelphia, 1893, p. 350.

collections in the infected tube. The frequency of the extension of gonorrhœal infection from the oviducts to the ovaries, although disputed by some authorities, appears to me unquestionable. At any rate, whatever may be the case elsewhere, in my wards at least acute inflammation of the ovaries has been brought under notice as a consequence of that infection almost as commonly as from puerperal and other septicæmic causes, being, in fact, as Sir Spencer Wells observed, "probably of more frequent occurrence than acute orchitis is in the male." The chief symptoms of this condition are a localised, continuous, dull aching pain, extending its area and increased on touch or motion, together with a directly recognisable enlargement and tenderness of the implicated gland. This condition in its acute stage is invariably attended with well-marked constitutional or febrile disturbance, and, subsequently, as the disease becomes chronic, with a long train of menstrual derangements and neurasthenic disorders which are not infrequently mis-ascribed to other causes. The latter or chronic form of gonorrhœal oöphoritis may, moreover, if neglected, lead to serious structural local changes, including suppuration, softening, or even complete disintegration of the stroma of the affected organ. Fortunately, however, the consequences of chronic gonorrhœal oöphoritis are by no means generally so immediately grave as in the cases just referred to, the more common results being chronic enlargement from congestive hypertrophy of the affected glands with consequent menstrual derangements and infective hyperæmic changes in the adjacent pelvic peritoneum, whilst in some instances of this kind the ovaries ultimately become nodular and atrophied and ovulation ceases.

With reference to the other intra-pelvic complaints of which gonorrhœa is a fertile source, I shall only here observe that long clinical experience has convinced me that in a large proportion of instances peri-uterine phlegmon, or, in other words, all those chronic inflammatory lesions of the pelvic serous and connective tissues formerly included in the term pelvic cellulitis and subsequently better known as perimetritis and parametritis, may be found traceable to that infection.

Therefore, in dealing with all possibly suspicious mucoid as well as muco-purulent discharges from the female genitalia, the practitioner should, I think, and as a general rule, without expressing any opinion, treat the case as gonorrhœal by the free local use of efficient germicides such as **Bichloride of Mercury** (1 in 2,000) or **Lysol** (1 in 100) solutions, until every trace of the disease has subsided.[1]

Fehling[2] draws attention to the various ways in which gonorrhœa

can affect the childbearing woman, and makes suggestions regarding her treatment. He has seldom found it necessary to treat urethritis occurring from this cause. The patient is directed to drink an abundance of water, and occasionally **Salicylate of Sodium** or **Salol** is given. In obstinate cases **Iodoform-bougies** are placed within the urethra. Where vulvitis and vaginitis are present, **Antiseptic Injections** produce good result. Normal **Saline Solution** and **Permanganate of Potassium** are useful in the form of douches. Twice weekly Fehling is accustomed to pencil the mucous membrane with 5 to 10 per cent. solution of **Nitrate of Silver,** using iodoform as a powder. Absorbent cotton should be placed between the labia, or compresses wet in lead-water. Where erosions are present upon the cervix, nitrate of silver may be used with a camel's-hair pencil. Gonorrhœal salpingitis is treated in the usual manner, by rest, counter-irritants, and morphine. Scarification of the neck of the uterus is sometimes practised where pain is excessive.

Should it be necessary to induce labour in a patient having gonorrhœa, it is well to douche the vagina with normal saline solution, or with an antiseptic if the infection be in an acute stage. In cases where there have been erosion and catarrh of the cervix for a long time, the tissues are rigid and dilatation slow, douches are often of value; multiple incisions are often required in these cases. No alteration in the placenta has been observed in gonorrhœal patients. Care must be taken with children to use prophylactic applications of nitrate of silver to the eyes. Gonorrhœal stomatitis is rarely seen in private practice, although described in hospitals. Absorption-fever is not infrequent in these cases, and is best treated by vaginal douches; after the first four weeks occasional applications of nitrate of silver are advised to the interior of the uterus. Fehling considers salpingitis not common in these cases, and draws attention to the danger that such a condition will go on with but little apparent disturbance until an abscess in the tube may suddenly rupture, setting up peritonitis. Fehling believes that in the greater portion of cases of gonorrhœal tubes that the contents of these tubes does not contain pathogenic micro-organisms aside from the gonococcus.

REFERENCES. — [1] "Lancet," March 28, 1896; [2] "Münch. med. Woch.," No. 49, 1895, and "Amer. Journ. Med. Sci.," April, 1896.

GONORRHŒA (Rectal). *Theophilus Parvin, M.D., Philadelphia.*

Out of one hundred and seventy-four cases of gonorrhœa in the female, Schultz[1] found the specific gonococcus in the rectum fourteen times. Baer[2] found the gonococcus in the rectum sixty-seven times in one hundred and ninety-one cases, or 35·1 per cent. In only two cases

did patients admit direct infection, and he believes it to be due to over-flowing of the vaginal secretion.

REFERENCES.—[1] "Centrabl. f. Gynäkol." ; [2] "Deut. med. Woch.," No. 8, 1896.

GONORRHŒA (Treatment of). *Priestley Leech, M.D., F.R.C.S.*

The following treatment of gonorrhœa is described by Dr. Leon Canova[1] in a thesis written for the Doctorate of Medicine of Paris. Mr. J. Ernest Lane has also used it with success for the past two years.

An irrigator is filled with a 1 or 2 per cent. of **Ichthyol.** The irrigator is provided with an indiarubber tube, and at the end of the tube is a nozzle, so constructed that after its introduction the orifice of the urinary meatus is blocked, and the solution cannot escape. The nozzle is pushed to a depth of an inch into the urethra, the solution is introduced into the urethra until the canal is distended to its utmost, and then allowed to escape. This is repeated until a pint of solution has been used.

Dr. Canova's conclusions are as follows :—

(1,) Ichthyol, by its analgesic, antiphlogistic, and antiseptic properties, is indicated in the treatment of gonorrhœa in preference to any other substance.

(2,) Irrigations of ichthyol compare favourably with permanganate of potash and silver nitrate solutions, in that they are quite painless.

(3,) They can be employed at the beginning of an attack, not with a view of aborting it, but to mitigate the inflammatory symptoms, and to prevent extension of the disease to the posterior urethra. Two daily irrigations may be used for five or six days at the beginning of an attack ; if they are not well borne, and there is no modification of the discharge, suspend them until a subacute stage is reached.

(4,) In the period of decline, irrigations of 1 to 2 per cent. will generally lead to a rapid cure.

(5,) In certain cases they fail, as do all other measures suggested, in the treatment of gonorrhœa.

Asmus[2] reports fifty-eight male cases of acute gonorrhœa successfully treated with injections of 2 to 10 per mille. emulsion of **Creasote.** The discharge quickly decreased, became mucoid, and then ceased altogether. The patients recovered more rapidly, complications were rare, and no relapses occurred. Creasote also seemed to have an anæsthetic effect on the urethral mucous membrane.

REFERENCES.—[1] "Practitioner," March, 1896 ; [2] "Meditzinskoie Obozrenie," No. 10, 1896, abstract in Epit. "Brit. Med. Journ.," July 11, 1896.

GOUT AND RHEUMATISM.

Alexander Haig, M.A., M.D. Oxon, F.R.C.P.

Gout, rheumatism, and rheumatoid arthritis, the diseases so commonly mentioned together, have the factor arthritis common to them all. In gout the arthritis is acknowledged to be due to uric acid ; in the two other diseases it has not yet been proved to be due to anything else. The best known causes of arthritis, besides uric acid, are probabiy traumatism, pyæmia, tubercle, and new growths.

We are now through increase of knowledge in a better position than we ever were before, for controlling the quantity of uric acid in the tissues, tissue fluids, and blood.[1]

If the arthritis of these diseases is due to uric acid it seems probable that its complete and effective control will stay its onward march, that repair will take its place and continue till all that is possible in that direction has been accomplished.

Let us then in place of casting all over the world for possible and impossible causes of rheumatism and rheumatoid arthritis, eliminate the factor, uric acid, and see what remains when this has been done.

One of the chief reasons for believing that rheumatism and rheumatoid arthritis are not due to uric acid is that Sir A. Garrod [2] failed to find any uric acid in the blood of patients suffering from them ; but I believe that human blood always contains some uric acid, and that Sir A. Garrod's results merely show that there is less in the blood in these two diseases than in some stages of gout.[3]

Rheumatoid arthritis resembles rheumatism in its relation to cold, moisture, and fatigue, in being accompanied and followed by anæmia and leucocythæmia, which are often the signs of excess of uric acid in the blood, and it is sometimes associated with gout, and the visible deposit of urates in the tissues ; and as I have shown in not a few cases called clinically chronic rheumatism, the joints are full of urates.[4] Its chief difference from rheumatism is perhaps its association with extreme debility and low nutrition, but both gout and rheumatism, when chronic, are associated with these and with anæmia.

Surely these are differences of degree merely, and do not in the least warrant the rejection of uric acid as a possible cause of all such arthritis.

From this point of view the relation of various forms of arthritis to cold, wet, fatigue, strain of fibrous tissues, constipation,[5] fevers, influenza, etc. ; or to the administration of acids, iron, mercury, lead, and mineral waters, containing sulphates, beef-tea, meat soups,[6] etc., is simply its relation to the effects of these things on the introduction and solubility of uric acid in the blood and tissue fluids of the

body; and it follows that if uric acid is absent from these fluids, the irritant action of these external conditions, diseases, and drugs, will fail to appear; and it seems to me that my results in myself and others suffice to demonstrate this as a fact.

We may proceed then to consider the treatment of arthritis by the control of uric acid, leaving it to our results and the future to deal with, and confirm or reject this causation.

That the arthritis called gout has been cured by alteration of diet is too well known to need more than mention, and that other kinds of arthritis have been similarly cured, even ancient history shows.[7]

TREATMENT.—Now it is easy to show that all dead animal tissues, their extracts and decoctions, contain considerable quantities of uric acid or xanthins, which are equivalent to it; and that the only food from animal sources which is free or almost free from such effete nitrogen is milk and its products, as cheese.

We know also that the alkaloids of tea, coffee, and cocoa, are xanthins, and must be carefully avoided.[8]

Now the above animal tissues contain about 25 per cent. of albumens: what have we got to take their place as regards nutrition? Milk contains only 3 to 4 per cent. of albumens, but cheese contains 33 per cent. (more than any of the dead tissues), and the pulses, as peas, beans, lentils, or dholl, which appear to be free from alkaloids, contain 22 per cent., while bread stuffs and cereal foods, which are similarly free, contain 8 to 12 per cent.

The diet problem, then, is the elimination of animal tissues and vegetable alkaloids, and the replacement of the former by equivalent quantities of milk, cheese, pulses, bread stuffs, and cereal foods. And provided that sufficient albumens are obtained, the whole vegetable kingdom, with the exception of its poisonous alkaloids, is open to us to choose from.

We can now proceed to consider the treatment of acute and chronic arthritis without further and often quite unnecessary distinctions, always provided that there is no obvious reason to suppose that it is due to causes other than uric acid.

Diet will take some time to act, and we must therefore treat acute arthritis in the first place with drugs to relieve the severe and urgent pain. The best of these is generally that most powerful of all solvents and eliminators of uric acid, **Salicylic Acid** and its salts. The more acute the arthritis and the higher the temperature the more likely is it to be promptly and completely successful. All that is required is to give it early and in sufficient dose, and alone, or at least not with things that hinder its action.[9] Thus, give say **Salicylate of Sodium,**

gr. xx (for an adult) every two hours for three or four doses, and then every four or six hours, according to results.

Latham[10] advises the use of salicylic acid rather than of its salts, and of salicylic acid obtained from the vegetable kingdom; and this should certainly be tried in cases which are rebellious to the artificial acid or its salts. He also lays stress on the important point to be noticed presently, though he does not explain it, that patients do best on this treatment if they are kept cool.

Give it out of **Inf. Gent. Co.** or **Aq. Menth. Pip.**, perhaps with a little **Sp. Ammon. Aromat.**, or **Ammonii Chlor.**, but not on any account with the alkaline salts of potassium or sodium.[11] Keep the joint quiet and slightly raised, but avoid local applications if possible, especially hot fomentations; and similarly if the arthritis affects many joints (acute rheumatism), keep the patient lightly clad so as to avoid great heat and perspiration which hinder the best action of the salicylates.

If the pain subsides and the temperature falls, the salicylate of sodium should be continued in 20-gr. doses not less than three or four times a day for several weeks, but now **Ammonium Salts, Iodides** or **Nux Vomica**, if there is debility, may often with advantage be added to it.

If the inflammation affected the fibrous tissues of the heart as well as those of the joints, gr. xxx. of an iodide may be given in the course of the day along with the salicylate, and blisters may be applied in succession over the cardiac area of the chest, as recommended by Dr. Caton.[12] The patient should be kept quite at rest till the temperature has been for a week or two steadily below 100°, and during this time acids, metals, digitalis, and anything likely to put a strain on the heart should be most carefully avoided.[13]

If one or more joints hang back from the general improvement and remain slightly puffy and painful on movement, they should also be treated with a series of small blisters.

If diet treatment is to be used it can be begun, as soon as the appetite and digestion have recovered from the acute attack, with 2 or more pints of milk, bread stuffs, *ad lib.*, 1 to 2 oz. of cheese, and some pulses, gradually increased as the patient becomes accustomed to them.

Tea, coffee and cocoa will of course be left out, though if milk is disliked, they may be used in quite minute quantities to flavour it at first; milk may also be mixed with soda water or barley water, or eaten with oatmeal, porridge or bread; or soup may be made of peas or lentils, using milk in place of meat stock.

As soon as the patient feels his feet on this diet, and is obviously not

suffering from defective or insufficient nourishment, he may bid good-bye to dead animal tissues, let us hope for his sake for ever.

As this diet is continued for months and months the patient will become gradually and progressively more and more free from arthritic manifestations: the injured joints will tend to recover, and the relapses, if any, will get slighter and slighter; and he will find not only that the myalgias and general pains, before so common, have vanished, but that he is able to take ever more and more exercise with less and less fatigue [14] at the time, and also with little or no stiffness and pain in his fibrous tissues next day; anæmia, if present, will have diminished or disappeared, and general nutrition will be 25 per cent. better.

Where, however, an acute arthritis yields in no way to such treatment by drugs and diet, and even where salicylates alone are properly given and freely absorbed without result, the evidence of the absence of causes of arthritis other than uric acid had better be re-considered.

When an arthritis, which was at first acute and monarticular (gout), has been treated with the many new remedies of advertising pharmaceutists, each of which is a better solvent of uric acid than the one before it, but none of which can as yet be mentioned in the same street with the salicylates; valuable time may have been lost, the attack may have naturally become subacute and the temperature not so high as at first, and then salicylates, especially for the first dose or two, may not act so well as if given from the first; but persevere with them even if the pains are a little worse after the first dose, and they will succeed.

Much more is this the case if at the first onset **Colchicum** has been taken by, or administered to, the patient; for colchicum acts as an alkali. It upsets gastro-intestinal digestion and causes more or less purgation; it thus runs down urea and nutrition, lowers the acidity of the urine and increases to a corresponding extent the alkalinity of the blood, and any good it does is due to its acting as an alkali and eliminating uric acid, just as the administration of large doses of the alkaline salts of potassium or sodium would do; but it thus creates a condition which, as I have shown,[15] is of all conditions the most unfavourable for the prompt and satisfactory action of salicylates.

Under these circumstances two courses are open to us, either (1,) to continue the colchicum and make the best of the less powerful elimination of uric acid under alkalies; or (2,) to stop the colchicum, and either at once or after an interval give the salicylates, doing what we can with acids or ammonia salts to aid their action, and overcome the effects of the colchicum; and our choice must be guided by the results, and the stage arrived at in each individual case.

The treatment of chronic arthritis is a much more difficult matter if only for the reason that as there is but little rise of temperature and often much debility and failure of nutrition, salicylates cannot with any certainty be depended on, either to eliminate uric acid, or to relieve the pain; indeed, as in gout treated with colchicum, they may even make it much worse.[16]

Their failure under these conditions does not show that the arthritis is not due to uric acid, but only that the conditions that favour their best action as solvents are absent. In many of these cases, however, they are still the best drugs to use; and especially where there is any slight rise of temperature they should be tried in doses of 15 to 20 grains three or four times a day, and if they fail to do good an attempt may be made to improve their action by giving them with **Iodides**, or **Salts of Ammonium**, or alternately with acids. Thus, let any ordinary mixture containing dilute **Nitro-Hydrochloric** or **Phosphoric Acid** be taken three times a day before meals, and the salicylates just after meals.

In some of these ways they may be got to act even in the most chronic cases, and when they will do so, I expect more from them than from any other drugs, and I have often continued them for twelve to eighteen months with much benefit, **Ol. Morrhuæ** or **Ol. Morrh. c. Malt** being conjoined with them in cold weather.

The chief contraindication to the employment of salicylates in chronic arthritis is the co-existence of severe debility, especially if associated with dyspepsia and loss of appetite. Here it may be impossible to get them to act even in combination with other drugs, and they may also do direct harm, if they cause nausea, and still further derange appetite and digestion.

Under these circumstances the best plan is to give tonics, such as **Arsenic** or **Iodides** with **Quinine** or **Cinchona** and **Cod-liver Oil**, if it can be digested, the object being rather to improve digestion, nutrition, and metabolism, than to directly affect the arthritis.

In these very chronic conditions it seems, however, as if the arthritis once started by urates is kept up and prevented from subsiding by the more or less constant presence of excess of uric acid in the blood, and it is just in these conditions of chronic dyspepsia and debility that we get large quantities of it passing through the blood from any stores and accumulations previously formed in the body. But if a tonic is given, or the dyspepsia is treated and relieved, not only will the general condition of the patient be improved, but the blood will be more or less cleared of excess of uric acid, and this constant source of irritation to fibrous tissues will be removed; and this, I think, is the

way in which the drugs and tonics just mentioned act in relieving chronic arthritis ; and many mineral waters, especially those containing sulphates, similarly clear the blood of uric acid, and relieve by doing so.

As is well known, the first effects of some of these waters, and also of some of the above-named tonics, is sometimes to precipitate an attack of more or less acute arthritis, as some of the uric acid is driven into the joints ; but once this has passed over, the blood is kept clear of uric acid for some time partly by the drug or mineral water, and partly by the period of improved nutrition which it initiates, and then the fibrous tissues have time to arrange some improved circulation and repair.

Such improvement may go on and continue for weeks and months till some new unfavourable conditions again upset nutrition, digestion, and metabolism : again the patient will run down and become debilitated, the blood will be again flooded with uric acid, and the chronic irritation of fibrous tissues will begin once more, and the tonic or mineral water will have to be repeated. But as these tonics and sulphate waters do not aid the elimination of uric acid from the body, but merely clear the blood by causing its retention in the tissues, it is obvious that they do not really go to the root of the matter, and that as soon as these effects pass off the chronic irritation must return, while diet may completely remove all excess of urate from the blood and tissues, and thus bring about a lasting prevention of relapse.

A highly animalised diet, such as one containing large quantities of meat and fish, will sometimes relieve chronic arthritis, and there seems to be no doubt that it does this by clearing the blood of uric acid just as do the above-named tonics and mineral waters.[17]

Such relief is generally, however, only temporary, and the patient, who has at first been stimulated by the meat, runs down again, and then, not only does the arthritis return, but as in some cases that have come under my notice after undergoing this treatment, he may suffer from some of the worst effects of excess of uric acid in the blood, such as extremely high blood pressure, headache, mental depression, fits, or Bright's disease.

Such treatment therefore seems to me to promise only quite temporary relief, while often threatening a great increase of the dangers to life.

Locally, very obstinate joints should be treated with liniments, such as **Lin. Chlorof., Lin. Belliad., Lin. Opii., Lin. Pot. Iod., Lin. Terebin,** or a combination of them, or with blisters, as advised in the more chronic stages of acute cases ; and if, after these, there is still some residual

stiffness and œdema of tissues the value of a course of **Massage** should not be overlooked.

REFERENCES.—[1] "Uric Acid," Ed. iii., p. 114; [2] "Gout and Rheumatic Gout," 1876, p. 552; [3] "Uric Acid," Ed. iii., pp. 73, 75; [4] Ibid., Ed. iii., p. 509; [5] "Lancet," 1890, vol. ii., p. 129; and Tidey, "Brit. Med. Journ.," Jan., 1896, and Haig, Ibid., March, 1896; [6] Latham, "Medical Magazine," March, 1895; [7] "The Ethics of Diet," by Howard Williams, M.A., London, F. Pitman, 1883, p. 65; [8] Lea, "Chemical Basis of the Animal Body," p. 175; [9] "Uric Acid," Ed. iii., pp. 37, 40, 517, and elsewhere; [10] Medical Magazine," March, 1895; [11] "Uric Acid," Ed. iii., pp. 37, 40, 517, and elsewhere; [12] Lancet," 1895, vol. ii., p. 399; [13] "Uric Acid," p. 515, "Brit. Med. Journ.," Dec., 1895; [14] Haig, "Lancet," March, 1896; [15] "Uric Acid," p. 517; [16] "Uric Acid," and "Brit. Med. Journ.," prev. refs.; [17] "Uric Acid," Ed. iii., p. 475.

[*Editorial.*

Systematic observations of the reactions of the blood, saliva, and perspiration, in patients suffering from gout, rheumatism, and arthritis, have been made by Dr. Percy Wilde, of Bath, during the past six years. He states as follows: "The test employed is a blue glazed litmus paper, sufficiently sensitive to acid to be reddened by the carbonic acid gas in the atmosphere if left exposed for a few hours. The results of the observations made before and during the treatment of patients at Bath are very instructive:—

"(1,) In every case examined the *blood* presented an *alkaline* reaction.

"(2,) The saliva is almost constantly acid in rheumatic patients, less constantly in gout. Variations take place during the day, and in relation to the state of the digestive organs and the process of digestion. It is therefore an unsatisfactory clinical test as regards the general condition of the patient.

"(3,) The skin and perspiration are invariably acid in rheumatism, both before and during the attack.

"At the termination of an acute attack the reaction may be acid; in this case convalescence is prolonged and relapse likely. This is particularly the case with patients treated with salicylates and antipyretics.

"The reaction may become neutral before the fever subsides. In this case early and complete convalescence is almost invariable.

"The return of the skin reaction to normal is always followed by relief of symptoms due to rheumatism.

"In *pure* gout (*i.e.*, a large proportion of gouty patients suffer from rheumatism) the skin is usually neutral during the quiescent state of the disorder. It becomes acid during acute attacks, or after the first few baths. During the baths the acidity of the skin increases up to a certain point, and then diminishes until a neutral reaction is obtained.

This is invariably accompanied by relief of the symptoms due to gout. In cases of arthritis (so called rheumatoid arthritis) an acid reaction of the skin is commonly found when first seen, but usually disappears after the first few baths, with relief to such symptoms as may be due to the rheumatism from which such patients frequently suffer. The disappearance of the acid does not relieve symptoms due to the arthritis, which we recognize as a wholly distinct disease from rheumatism or gout.

"(We may mention incidentally that after the relief of the rheumatic symptoms of arthritis, a diet from which all farinaceous foods are rigidly excluded yields very remarkable results.)

"In respect to the influence of methods of treatment which these patients have undergone previous to coming to Bath, we find that the skin is just as acid in patients who have undergone a long course of alkaline treatment as those who have not. We do not find that any system of dietary diminishes the acid reaction of the skin, nor have we discovered any drug which will remove the condition. Considering the enormous quantity of acid existing in the skin of rheumatic patients, it is quite impossible to believe that the blood is the medium by which this acid (*as an acid*) is conveyed to it. We are strengthened in this opinion by the fact daily observed in the treatment of patients, that it very frequently happens that the skin reaction of the hand or foot, or some other well localised part, will remain persistently acid, for some days after the remainder of the skin has regained a neutral reaction. This would hardly be the case unless the acids were the result of imperfect metabolism taking place in the tissues themselves, *i.e.*, extra-vascular. As the baths and treatment employed at Bath are such as bring an increased supply of blood to the affected parts, it would be unlikely that benefit would be obtained, and the acid condition of the skin disappear, if the disorder was due to 'an excess of acid in the blood.'

"The imperfect oxidation of the products of tissue waste produces effects which are extra-vascular in the patient's ordinary state. We may postpone or modify an acute attack by drugs, or by care in the diet, but the matter already deposited in the tissue remains, and it is only by methods which increase the metabolism in the tissues themselves that we can remove them, and demonstrate by precise clinical evidence that the products have disappeared.

"Simple fever (as from a chill) has a remarkable effect in removing the acid condition of the skin. When fevers are cut short by antipyretic drugs the acid remains uneliminated, and convalescence is protracted. Simple fever is always beneficial in cases of gout and rheumatism, providing the action of the skin is properly maintained."

GRAVES'S DISEASE. *P. Watson Williams, M.D. Lond. (Bristol).*

The pathology of exophthalmic goitre is still unknown, though many facts have been brought to our knowledge of late which clearly point to the thyroid gland as an important factor contributing to the group of symptoms known clinically as Graves's disease.

I need not recapitulate the structural alterations that have been found in the thyroid gland in Graves's disease, nor dwell on the many arguments that have been advanced in support of the theory that the disease is *due* to excessive thyroid gland secretion, and is therefore essentially a thyroid secretion "toxæmia." The thymus gland is often found hypertrophied in Graves's disease, and it is held by Owen and others that this is a compensatory process, its internal secretion exciting an antidotal influence in Graves's disease. There are, however, equally strong reasons to believe that the thymus hypertrophy is a concomitant lesion.

In recording a case of Graves's disease with unilateral symptoms,[1] I have drawn attention to the difficulty of regarding a unilateral exophthalmos, thyroid gland enlargement, hyperæmia, etc., as being the result of a general toxæmia. One could understand that one or more groups of phenomena might result from the action of a general poison affecting one side alone, or more than the other side. We frequently observe this in diphtheritic and alcoholic neuritis, but when the unilateral character of the symptoms extends to ocular manifestations, enlargement of the thyroid gland, hyperidrosis, flushing and œdema, it is difficult to avoid the conclusion that these symptoms are the result, not of a general toxæmia, but of a central nerve lesion. Fridenberg has been able to collect thirteen cases exhibiting unilateral ocular symptoms.

Any attempt to return to the exploded views that Graves's disease is a lesion of the sympathetic nerve ganglia, or due to medullo-pontal lesions is out of the question, although the medulla oblongata does contain many centres presiding over complex co-ordinated organic phenomena, regulating and controlling in their mutual action and reaction still lower organic centres in the spinal cord, in the heart muscle, in the muscular walls of the vessels, etc. But it is inconceivable that, between the lower organic centres in the medulla and the highest perceptive and volitional centres in the cortex, there are no intermediate or organic centres higher than those in the medulla, viz., subconscious-emotional or higher organic centres, which regulate and control the very complex organic phenomena of emotion. Such centres may perhaps be connected with the cerebellum, as suggested by Courmont. If such higher organic centres exist they are subject to

disease, and while on the other hand their disturbance will be attended by the highly complex organic phenomena corresponding to those normally associated with profound emotional disturbance, they will be accompanied by the still less understood conscious phenomena of emotion conveniently described as emotivity. Now sudden intense or prolonged shock or grief in the first instance inhibits the heart's action, slows the pulse, raises arterial tension, inhibits secretion of the skin, etc. But if sufficiently intense, or if acting on an inherently weak nerve structure, such a degree of molecular disturbance may be induced in the affected regions that death may be caused either immediately or in a short period ; or if the disturbance is less marked, the affected nerve structures may be rendered more or less permanently paretic, with consequent secondary phenomena of emotional shock, viz., tachycardia, arterial dilatation with low tension, sweating, etc. Thus, from defective control, the accelerator nerve to the heart runs riot on the slightest provocation, while flushing, perspiration, and excitation are exaggerated by slight causes, such as the visit of a stranger, slamming of a door, and so forth, while together with exophthalmos, ocular paresis, and thyroid enlargement, they are more or less constantly present.

This group of symptoms is known as Graves's disease. The excessive thyroid secretion, when present, aggravates the symptoms which it did not cause, just as starch and sugar in the diabetic diet aggravates the disease which these common articles of food do not cause. But we do not say that, because diabetes is favourably modified or cured by eliminating starch and sugar from the diabetic diet therefore starch and sugar are the cause of diabetes and that diabetes is pathologically a "saccharine toxæmia."

TREATMENT.—The only recently introduced method of treatment that calls for extended notice is that of administering preparations of the **Thymus Gland.** At the Annual Meeting of the British Medical Association in 1896, David Owen, of Manchester, spoke enthusiastically on the successes obtained by this method. He has previously recorded[2] a case of exophthalmic goitre of twenty years' observation in which thymus feeding was followed by restoration to health. Owen relates two other cases of his own, one a male, the other a female, aged twenty-five. The former was treated with raw or broiled thymus, the latter with a glycerine extract of thymus. Both improved ; in the man exophthalmos, tremors, palpitation, and pigmentation, had all disappeared, and the pulse was 80 instead of 124. The female gave less satisfactory results ; but there was some improvement.

Owen cites the following reports of cases treated by others.

Mikulicz[3] found that nine out of ten cases of ordinary goitre improved on thymus, and in a case of Graves's disease he noted improvement in palpitation, dyspnœa, exophthalmos and tachycardia. Cunningham[4] treated several cases with results which he describes as "surprising, gratifying and very suggestive." Edes[5] had a case which improved on thymusine so as to be able to return to work. She had been treated previously for nine months with no favourable result. Solis Cohen is said to have tried thymus in several cases followed by "great improvement." McKie[6] reports one case, and Maude[7] four cases with most gratifying results, and a similar evidence of its value is afforded by Todd.[8] Owen remarks that "Watson Williams[9] has recorded a case in which thymus feeding apparently aggravated the tachycardia and pyrexia, but improved the general nutrition, the body weight being apparently increased by four pounds in the week. It is rather doubtful whether the aggravation of symptoms was due to the treatment, as the pulse rate was much higher when only 30 grains per diem (in tabloids) were being taken, than when half an ounce (of the fresh calf's thymus) was the daily dose. The temperature also reached a higher point a week after the thymus was stopped, than it had done while the treatment was being carried out." I may add that the patient was improving with simple rest in bed, that the administration of the thymus certainly aggravated the typical features of Graves's disease, and that only on discontinuing the thymus these untoward features were subsiding; on resuming the thymus treatment the same result was noted. In a second case my experience was very similar.

Nauheim Baths.—In one case of Graves's disease I found that simple saline baths produced no definite result, but that the carbonic acid baths greatly aggravated the symptoms and actually produced temporary exophthalmos where it did not previously exist.

REFERENCES.—[1] "Clin. Journ.," Dec. 11, 1895; [2] "Brit. Med. Journ.," Feb. 15, 1895; [3] "Berl. klin. Woch.," April 22, 1895; [4] "Med. Rec.," 1895, vol. i, p. 742; [5] "Boston Med. and Surg. Journ.," Jan. 23, 1896; [6] "Brit. Med. Journ.," 1896, vol. i, p. 656; [7] Ibid., July 18, 1896; [8] Ibid., July 25, 1896; [9] "Clin. Journ.," Dec. 11, 1895.

HÆMATINURIA. (See "Malaria.")

HÆMORRHAGE (Intra-ocular).

G. E. de Schweinitz, M.D.,
Clarence A. Veasey, M.D., } *Philadelphia.*

One of the most serious complications that may arise after the extraction of a cataractous lens is the occurrence of *intra-ocular hæmorrhage.* Dr. J. A. Spalding[1] in a paper on the subject, to which

is appended a bibliography of the previously reported cases, discusses the accident at some length. Different causes for the occurrence are given by different operators, among them being atheroma, increased tension, which is suddenly lowered by the escape of the aqueous humour, relaxation of the suspensory ligament, and nausea. On the other hand, nausea is thought by some to be produced by the sudden hæmorrhage, as is the case, for example, when the finger is suddenly jammed between two doors, or receives a severe blow, rather than to be productive of the hæmorrhage. Iridectomy does not seem to increase the probability of its occurrence.

The position of the hæmorrhage also differs: in some cases originating from the anterior surface of the choroid; in others, between the choroid and sclera; and in still others from the ciliary bodies. Prophylaxis seems to be impossible as there are no premonitory symptoms, except in those cases where one eye has been lost and an operation is to be performed on its fellow. In these it is advisable to administer **Ergotin** hypodermically, to employ **Pressure Over the Carotids** for a day preceding the operation, and to operate with the patient in a **Sitting Posture,** possibly selecting some other method than the flap operation.

Concerning the propriety of operating on an eye when its fellow has been destroyed by intra-ocular hæmorrhage after operation, there is also difference of opinion. Some prefer to operate, adopting prophylactic measures, while others decline to operate at all, thinking that what sight remains in the eye with a mature cataract is better than none (Liebreich). The latter view does not hold good, however, as many cases have been operated upon without accident and with the preservation of useful vision. When the accident does occur the best treatment is the **Elevation of the Patient's Head,** the hypodermic administration of **Morphine** to allay the pain, the cleansing of the eye with an **Antiseptic Solution,** and careful watching that **Enucleation** may be performed as early as the condition of the eye demands.

REFERENCE.—1 "Archives of Ophthalmology," Jan., 1896, vol. xxv.

HÆMORRHOIDS. *Herbert William Allingham, F.R.C.S. Eng.*

As in previous years the various modes of treating by palliative or operative measures the many forms of hæmorrhoids have been widely discussed, and new treatment has been proposed.

Mr. N. C. Mitra[1] has treated internal piles, which bled freely, by the conjoint use of **Tinct. Ferri Perchloridi** and **Hazeline,** both as an injection and also as a medicine. He holds that this combination is a novelty and highly serviceable.

The American journals have been full of controversy with regard to the carbolic acid injection, Whitehead's operation, and the so-called "American operation"; but the only new method is the **Sub-mucous Ligation**, tenatively practised by Rickets.[2] The sphincter is dilated, and a thread is passed about the pile by a large semi-circular needle passed subcutaneously from the muco-cutaneous line to the upper border of the "pile-bearing area," and returned to the point at which it entered. The thread is tightened and the ends left hanging.

REFERENCE.—[1] "Indian Lancet," Feb. 1, 1896; [2] "Therap. Gaz.," Dec. 15, 1895.

HALLUX VALGUS. *Priestley Leech, M.D., F.R.C.S.*

Several operations have been proposed for the treatment of this affection. Ogston proposes complete excision of the head of the first metatarsal bone; Riedel, excision of first phalanx; and J. Reverdin recommended cuneiform osteotomy of the first metatarsal.

Delbet,[1] in a case, excised a suppurating bursa and an exostosis over the head of the first metatarsal; he then opened the metatarso-phalangeal joint, and excised a portion of the head of the metatarsal bone. Reduction could not be performed, and he found this was due to contraction of the tendon of the extensor of the great toe; he drew this inwards, and fixed it by means of a periosteal flap to the inner side of the metatarsal bone.

REFERENCE.—[1] "Gaz. des hôpitaux," No. 27, 1896.

HAND (Contraction of Flexors). (See "Amputations.")

HEADACHE. *Græme M. Hammond, M.D., New York.*

Gailliard[1] calls attention to a form of headache which is distinguished from migraine and syphilitic cephalalgia by its continuity, the absence of nausea and vertigo, and its cessation at night. It is generally limited to the forehead, rarely to the vertex, to the occiput, or to the temples. He treats these cases by giving, early in the morning before breakfast, 1½ grains of **Calomel** for six consecutive days. On the third or fourth day diarrhœa sets in with slight colicky pains. The gums are carefully watched. The headache generally disappears, but, should it persist, a similar six days' course is given after the lapse of a few weeks.

REFERENCE.—[1] "New York Med. Journ.," March 28, 1896.

HEART (Diseases of). *Frank W. Jackson, M.D., New York.*

Porter[1] has carried out an exhaustive experimental investigation of the effects of mechanical closure of the coronary arteries of dogs, in order to answer some of the questions as to the precise reason for

the sudden stoppage of the heart's action in connection with disease of the coronary arteries, and also as to the relative importance in its production of different branches of the coronary arteries. As a result of these experiments he shows that complete closure of all the coronary arteries was in every case followed by complete arrest of the heart beat. This result was less constant when only one of the branches was occluded, the frequency of arrest being directly proportionate to the size of the vessel occluded. It was shown that the stoppage of the heart was not the result of mechanical violence, incidental to the ligation, for the same result was obtained when the coronary artery was closed by the introduction of a glass rod through the innominate artery and the sinus of Valsalva. It was also noticeable that the frequency of arrest after ligation was inversely proportional to the amount of destruction of the heart muscle. In all the cases in which arrest finally occurred there was distinct diminution in the blood pressure, almost immediately following the operation; the heart became engorged with blood, and within a very short time fibrillary contractions of the heart muscle were observed. These persisted for some time after complete cessation of any co-ordinate beat. The whole effect of closure of the coronary arteries is attributed to anæmia, the various branches of the coronary artery being physiologically, if not anatomically, terminal arteries. Finally, the interesting fact was noted, that, in several of the experiments, removal of the obstruction to the coronary circulation, and emptying of the engorged heart by rhythmical massage, were quickly followed by return of the normal heart-action.

Aufrecht[2] calls attention to alcoholic myocarditis as a form of heart disease which he thinks has not received sufficient attention. The disease usually occurs in men between the ages of twenty-five and fifty, but one case appeared in a man nineteen years old. Brewers and liquor dealers form a large proportion of the cases. Women are rarely affected. The disease proceeds very gradually, and the majority of patients are well nourished or corpulent. The first complaint is of shortness of breath on talking or going upstairs. Sometimes pressure in the præcordia is experienced. The patients are usually able to continue their business, especially when it does not involve severe bodily labour. On account of the course of the disease the heart is rarely examined in the earliest stages, but cases examined at such times show an enlargement of the cardiac dulness, rarely a murmur. The lesion is first a dilatation from the effects of alcohol on the muscle; this is followed by hypertrophy of the muscular fibres and their nuclei, increase of connective tissue, thickening of the smaller

arteries with increase of nuclei in their walls, and, finally, fragmentation of the muscle fibre. At an early period in the disease the liver is enlarged, perhaps on account of the dilatation of the heart, though Aufrecht thinks more probably from inflammatory changes due to alcohol. Later cirrhosis occurs, either atrophic or hypertrophic. Congestion of the kidneys also occurs with temporary albuminuria. Hitherto different stages of the disease have been described and, owing to the length of time over which it usually extends, the complete clinical picture has been difficult to obtain. In hospital work only single phases of it come under treatment. Thus, in the first stage there are merely symptoms which point to the heart as the seat of the affection. With increase of the heart dulness, clear valve sounds are heard, or, at most, only a low systolic bruit, which may lead to the erroneous supposition of an endocardial lesion. Such patients are discharged after a time apparently quite well. More frequently, however, patients are admitted in a more advanced stage of the disease. Then we have a high degree of anasarca, ascites, enlarged liver or cirrhosis, not infrequently albuminuria, and invariably dilatation and hypertrophy of the heart. A diagnosis of chronic nephritis with consecutive cardiac hypertrophy is usually made, and it is only after the complete disappearance of all these symptoms that some doubts are expressed as to the nature of the case. Bollinger first described the morbid appearance under the head of idiopathic hypertrophy and dilatation of the heart, and he considered that in many cases the disease ran an acute course, ending fatally in two or three weeks. Aufrecht, on the other hand, holds that it extends over a much longer period—three to five years—and cites three cases which were under his observation for long periods of time. According to his experience the disease is invariably the result of excessive indulgence in alcohol. Bollinger states that it is largely a disease of Munich from immoderate use of beer by plethoric individuals, but Aufrecht is convinced that it is much more general, and that the patients usually belong to the better class, and that alcoholic drinks in any form, when used in excessive quantity, may lead to myocarditis. It is to be differentiated from chronic nephritis, fatty heart, and ordinary heart disease.

Leyden[3] has given us a study of tuberculous affections of the heart. There are three forms of cardiac tuberculosis, according as it affects the heart-muscle, the endocardium, or clots present in the auricle and ventricle. Tubercle in the cardiac muscle is rarely found, but tuberculous foci containing tubercle bacilli have been demonstrated on several occasions. Apart from the actual deposit of tubercle, the heart muscle may undergo fatty degeneration in tuberculosis, but

cardiac fibrosis is rare, and may even then be due to some other cause. The valves are not infrequently diseased in phthisis, but usually the valvular disease has existed before the tuberculosis. Occasionally the endocarditis is recent. In one such case the streptococcus was alone found. In four other cases tubercle bacilli were found in the valves or endocardium. The bacilli were generally seen to be contained in cells. In one of Leyden's cases tubercle bacilli were found in the substance of an ante-mortem clot in the heart. He directs attention to the presence of living bacilli within the cells, and he thinks that such cells may be transported elsewhere and form new foci of tubercle. The presence of tubercle bacilli in the clots he would explain by the penetration of the bacillus containing leucocytes into them. He thinks that the fibrinous exudation in pneumonia may, under certain conditions, be invaded by cells containing the tubercle bacillus, and that then a genuine pneumonia may pass into a caseating or tuberculous pneumonia.

Ewart[4] has published a very valuable and extensive paper upon practical aids in the diagnosis of pericardial effusion, in connection with the question as to surgical treatment. He enumerates twelve signs which are understood to apply to effusions sufficiently large to raise the question as to surgical interference, and not to the more delicate diagnosis of slight and early effusions. These are: (1,) *Considerable extension of the lateral boundaries of the total area of dulness;* (2), *Great extension of the absolute dulness; the sternum absolutely dull;* (3,) *Depression of the liver;* (4,) "*Rotch's sign*"—*Dulness in the right fifth inter-cartilaginous space;* (5,) *Diagnosis between pericardial effusion and cardiac dilatation;*—the lower angle of the pericardial dulness projects toward the right in the former; (6,) *The left lower angle of dulness, and the relation of the apex beat to this angle.* It is uncommon to find the lower and left area of dulness a prominent angle except in pericardial effusion; hence this alone is very significant, although not an absolute guide. The determination of the relation of the heart's apex to the left angle of dulness is of great diagnostic value. The apex cannot be felt where there is much effusion, but it will be heard beating at a spot somewhat inside and above the boundaries of dulness; (7,) *The first rib sign.* In all cases of considerable pericardial effusion examined by Ewart it was possible to feel with the finger the upper edge of the first rib as far as its sternal attachment. This points to a raising of the clavicle and to a relaxation of the ligament between it and the first rib. Ewart states that he has only seen this sign in pericarditis and, rarely, in some cases of considerable cardiac enlargement; (8,) *A posterior pericardial patch of dulness.* The value

of this sign is that, unlike many others, it is very sharply defined, and does not fit any other diagnosis. When, in a doubtful case, all the signs observed in front support the diagnosis of effusion and this sign is also found, we have then in hand complete and crucial evidence of the existence of fluid. When, however, previous adhesions of the anterior surface of the heart to the chest-wall render diagnosis extremely difficult, this help is invaluable. The sign is a patch of marked dulness at the left inner base of the lung, extending from the spine for varying distances outwards, usually not quite as far as the line of the angle of the scapula, and ceasing abruptly with a vertical outer boundary. Above, its extension is also variable according to the size of the effusion; commonly it does not extend higher than the level of the ninth or tenth rib, and here again its horizontal boundary is abrupt. Its shape, then, is that of a square, and is quite unlike that of any dulness arising from pleuritic effusion; (9,) *Tubular breathing below the right mamma.* Although not constant, this sign, which does not appear to have been noticed, should be looked for in severe cases. At the anterior base, usually in the nipple line, and a little above the hepatic line, distinctly tubular breathing is audible. This tubular breathing is sometimes restricted to expiration; (10,) *A posterior pericardial patch of tubular breathing and ægophony.* Immediately below or slightly to the left of the tip of the left scapula there may be a patch about two inches in diameter which presents well-marked tubular breathing and ægophony. This sign, though not so important as that of the patch of dulness, is very commonly present in cases of considerable effusion. It also occurs in pleural effusions; (11,) *Secondary pleural effusions.* Pleural effusion is among the most common complications of severe pericardial effusion. It frequently begins in the right pleura, but it is not uncommon for the effusion to occur ultimately on both sides; (12,) *The large slapping pulse of pericardial effusion.* This has been frequently observed by Ewart. The peculiarity of this pulse is its great size and velocity of impact, and the sudden collapse of the wave. In fact, it is Conigan's pulse, almost of a typical kind, though never so extreme as in well-marked aortic regurgitation. Ewart points out that the *pulsus paradoxus*, though an important sign, belongs to mediastinal rather than pericardial disease, and it cannot be regarded as diagnostic of the latter. This fact was also shown by Harris' article in last year's "Annual" (page 340).

Giffith [5] shows by a series of cases, in which he has marked out upon the chest the area over which the murmur of mitral stenosis may be heard, that the general rule that this murmur is sharply limited to the

mitral area or its vicinity must be modified (*Figs.* 23—25). The murmur is frequently heard much beyond the ordinarily prescribed limits. In these cases the murmur has oftenest occupied the mitral area, and has extended thence in a narrow, tongue-shaped band upward and to the left into the axilla. In some cases it is audible in an area much greater than this.

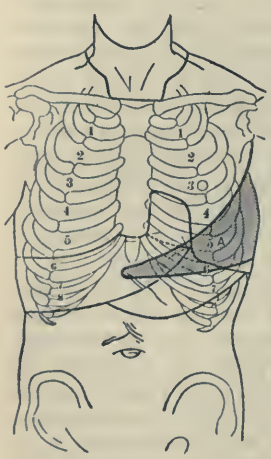

Fig. 23.

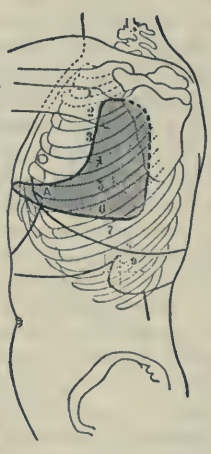

Fig. 24.

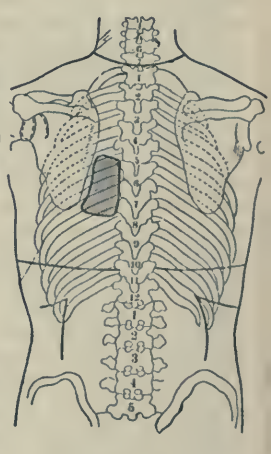

Fig. 25.

TREATMENT.—The value of the **Nauheim, or Schott Method** of treatment of heart disease appears to be as yet *sub judice*. In the United States it is but little discussed, but in England there has been much written both for and against the method. Bezly Thorne[6] is, as is well known, active and uncompromising in his advocacy of the treatment. Robert Saundby[7] also is very much in favour of it. He mentions a case of a greatly dilated heart in which he percussed out the outline of the heart, and after the patient had gone through the first and second exercises, which took three or four minutes, he percussed the heart again, and was "startled to find that the area of cardiac dulness had receded by about an inch in every direction." Saundby did not have an opportunity of seeing a patient in a bath, but Sir T. Grainger Stewart and Dr. Holman (who were staying at Homburg) reported that they examined a man whose heart was greatly dilated and whose pulse was 124, irregular and small. After three minutes' immersion in the bath the pulse had fallen to 114, and in six

minutes to 108, whilst it had become evidently better filled. After eight minutes they percussed his heart and found that the dulness had receded an inch in every direction. Saundby concludes from his study of the subject that the Schott method is a promising one, but there is danger of checking a fair trial of this method by a hasty extension of it to cases forbidden by Dr. Schott. Worked carefully and conscientiously on the lines laid down by its originator, it seems capable of being usefully introduced into our hospitals, into private practice, and, especially, into the practice of physicians at such watering-places as are frequented by many cardiac patients who go there for treatment of their rheumatic and gouty ailments. There is one large group of cases in which private practitioners may be able to apply this treatment with advantage, viz., the numerous cases of weakened heart after acute diseases ; acute rheumatism, scarlatina, influenza, etc., which at present are allowed to take their chances of strengthening under the not always satisfactory plan of walking exercise, the regulation of which is left very much to the patient's feelings and temperament. Bowles[8] also endorses this method, as do Sir William Broadbent, Drs. John Broadbent, Kingscote,[9] Thorne, Leith, and others. Herschell,[10] on the other hand, doubts the efficacy of the treatment. He thinks that at the present time, when this method of treating disease of the heart bids fair to be extensively practised, it may not be out of place to say a few words of very serious warning to those who are disposed to accept it at the valuation of its introducers. He doubts the accuracy of the diagrams which appear to show a diminution of the area of cardiac dulness, and, very rightly (in my opinion) calls attention to the liability to error in successive examinations of the heart either by the method of ordinary percussion or by auscultatory percussion. In the latter method "the slightest variation in the position of the stethoscope in successive examinations would cause this line of apparent dulness to vary correspondingly." In four cases treated with baths by the Schott method in the National Hospital for Diseases of the Heart and Paralysis, neither the position of the apex beat nor the area of cardiac dulness was changed, nor were the patients improved in their general conditions. He thinks that in cases of valvular disease with compensation there is grave danger that the treatment may result in grave disturbance of the hitherto adequate compensation. He[11] believes, however, that the evidence in favour of the practical utility of the resisted movements in selected cases is overwhelming. His experience leads him to believe that better and more constant results are obtained by substituting a mechanical resistance to the movements for that of a

nurse. We may use either a pulley weight apparatus, or one in which the effect is produced by tension of rubber cords—preferably the latter.

Dr. H. Newton Heineman, of New York, who has been studying the subject at Nauheim and in Berlin and Paris during the past year, has recently read a paper before the New York Academy of Medicine, in which he warmly advocates the system. His series of cases was a hundred and twenty, and he is positive of the improvement of the patients under the treatment in proper cases, such as valvular diseases of the heart, myocarditis, dilated heart, angina pectoris, and Basedow's disease. Cases of aneurysm of the aorta, of arterio-sclerosis, acute nephritis, and the atrophic form of chronic Bright's disease, are not to be treated by this method. He has demonstrated the diminution in the size of the heart both by percussion and by the position of the apex beat, and also by the Röntgen rays. In the latter method of examination his photographs have shown the heart to be both smaller and changed in shape after the treatment. He claims that a permanent compensation is established by the treatment, and not simply a temporary reduction in the size of heart. Moreover, the action of digitalis and other cardiac stimulants is more certain and more satisfactory after the patient has left Nauheim.

Gendre [12] recommends the application of an **Ice-Bag** to the præcordia in the cardiac complications of the several acute infectious diseases. An ice-bag containing cracked ice in small quantities, and separated from the skin by one or two layers of flannel, should be applied, care being exercised that too much pressure is not produced. The patient should lie quietly upon his back, so as to avoid the necessity of fixing the bag against the chest, but if he is restless it must be held by means of a bandage. Ordinarily the application should not be kept up for longer than three days. The effects produced by the application in what he terms functional troubles of the heart, as, for example, those which are symptomatic of pericarditis, acute endocarditis or the hypertrophy associated with any acute infection, are exceedingly interesting. There is marked amelioration of all painful symptoms. Palpitation, even if excessive, is greatly improved. Thus a pulse on the first day may be 140 to 150; on the second, 120; on the third, 100; on the fourth, 80, and it is also more forcible. The heart's action is more regular; the *bruit de galop*, or intermittance of the heart sounds, usually disappears. Gendre regards the effect of the application of the ice as similar to the action of cardiac tonics, such as digitalis. Not only does it produce a favourable influence upon these functional disturbances, but it also tends to relieve the inflammation of the pericardium, or even of the heart muscle itself. Jullien, in dis-

cussing the paper, states that cold applications to the pericardium are also of value in the cardiac irregularity of chlorosis, of nephritis and of mitral stenosis.

Caton [13] has published an extensive paper on the treatment of acute endocarditis. He states that he has successfully treated several cases of acute endocarditis supervening upon an attack of acute articular rheumatism by the early administration of **Potassium** or of **Sodium Iodide,** together with the application of **Fly Blisters** over the præcordia. He gives 10-grain doses of the iodide as soon as he hears a cardiac murmur, or even before he hears a murmur, when the heart sounds become indistinct, indicating imminent endocarditis. At the same time he orders small blisters to be applied over the heart, preferably over the fourth, fifth and sixth intercostal spaces. He also continues the **Sodium Salicylate** treatment for the rheumatic arthritis. The use of the iodide should be continued until the endocardial murmur has become imperceptible. He claims that this result is obtainable in a majority of cases, and often within a few weeks.

Murray [14] makes a strong plea for the use of **Mercury** in heart disease. The administration of the drug in cardiac dropsy and in all cases of passive congestion of the pulmonary and portal systems is as old as the hills, but repeated observations have convinced the author that mercury possesses a value far beyond the supposed "alterative" nature of its action, and that it fails to relieve congested vessels by drainage or osmosis, for it would not relieve the heart did it not eliminate biliary and other effete matter from the blood and tissues of the liver and portal system. But when due allowance has been made for these primary effects, there remains strong evidence that it tells upon the heart itself. Its special benefits are exercised in cases of dilated and hypertrophied heart. Here the weak, rapid irregular pulse is made full, soft, regular and slow, with manifest relief of such symptoms as dyspnœa, faintness and pectoral oppression. The *angine sine dolore* is often marvellously relieved or removed by 2 or 3 grains of blue pill three times a day, and the severe forms of angina pectoris not seldom disappear under its influence. It is much more permanent in its effects than nitro-glycerine and the nitrites. To give digitalis a fair chance it is absolutely essential to pave its way by preliminary doses of mercury, and to foster its action by repeated doses. Many of the apparent failures under such drugs as digitalis are due to the fact that no blue pill or calomel was given. The author cites an interesting case of a man suffering from valvular disease of the heart with dilatation, general anasarca, and thready and irregular pulse in which, digitalis and iron having failed,

cardiac stimulants were abandoned and 2 or 3 grains of blue pill were given thrice a day for a week or more. There was marked and steady improvement in all his symptoms. The dropsy receded and the pulse became more regular, full and soft. Digitalis was then given occasionally, but the staple of the treatment was the steady use of blue pill, now gradually diminished to two pills a day, and finally to a 5-grain pill at bedtime. In six weeks he resumed his duties and became a useful and active member of society. For ten years he stuck to his blue pill every night, with few intermissions, for if he left off his pill for a few nights, his heart began to trouble him and his breathing became difficult. The heart, which subsequent autopsy showed to be enormously enlarged with dilatation of all its cavities and stenosis of the mitral valve, was enabled in some mysterious way by this nightly dose to discharge its duties in such a way as to make its owner feel quite well for ten years. He took 20,000 grains of blue pill in those ten years without salivation ; it never nauseated him and it never even purged him.

In this connection it is interesting to note an article by Horatio C. Wood,[15] of Philadelphia, who points out that engorgement of the portal system is almost always present in cases of heart disease ; and when the pulse is hard and there is marked œdema of the limbs, digitalis is of no use. What special success he may have had in the treatment of this class of cases is attributed to the fact that he has always recognized the value of mercurials. He considers mercurial purges and corrosive sublimate, given in small but long-continued doses, as of the greatest importance in these cases; $\frac{1}{50}$ of a grain or even $\frac{1}{100}$ of a grain of **Corrosive Sublimate**, given with the tincture of the **Chloride of Iron** will sometimes effect almost a revolution by aiding the true heart tonics. The digitalis alone may lie in the alimentary canal without producing any effect, but mercurials aid in its digestion and absorption.

Balfour,[16] in a paper read before the Section of Pharmocology and Therapeutics at the Annual Meeting of the British Medical Association, has admirably discussed the **Digitalis** group and their use in the treatment of disease of the heart. We have not space for even an abstract of the whole paper, but his comparison of digitalis and strophanthus is here given. He points out that the fundamental action of the members of this group is to increase the elasticity of muscular fibre, so that it expands more slowly and contracts more perfectly. The effect of this upon a hollow muscle like the heart is that it dilates more slowly and empties itself more completely. The heart and the muscular coat of the arteries are affected earlier and more powerfully

than the other muscles, because since the blood is continually passing through them they receive a larger dose of the drug within the same space of time. But the arterioles are not affected to nearly the same extent as the heart, because they are only stimulated by the comparatively small quantity of blood passing through their own district. This effect is that of digitalis itself: it is probable that, besides the general action on the muscles, each of the members of this group has a common action on the heart, coupled with specific differences of its own. Digitalis, for example, acts powerfully on the heart and arteries, and less on the uterus and bladder. The action of ergot is just the reverse. Fraser tells us that **Strophanthus** acts powerfully on the heart and but slightly on the muscular fibres of the arterioles, and he claims this as an advantage in favour of strophanthus. Balfour, however, considers this but a doubtful advantage, since, from the absence of any marked constriction of the arterioles, any rise in the blood pressure following the use of strophanthus must be due to ventricular action only. It is not, therefore, persistent, and can only feebly affect the general muscular metabolism, that is, the nutrition of the heart muscle as well as that of the general muscular system. We need not, therefore, wonder that when the action of the drug is withdrawn the heart is not found to have received permanent benefit, but remains pretty much as it was. Strophanthus forces on the ventricles an increase in the strength and duration of the systole which ceases with the action of the drug. It acts as a cardiac poison and not as a cardiac tonic. In cases of valvular lesion with ruptured compensation and dropsy, strophanthus acts doubtless as a diuretic, but in this respect it is uncertain. Strophanthin has, however, two advantages over digitalin; it is readily soluble in water, and it is rapidly absorbed; it is thus available for hypodermic injection, and, as it acts with great rapidity, it may be of service when the administration of any drug by the mouth would be of little use. Thus, there may be circumstances in which strophanthin is to be preferred to digitalin, though it is doubtful whether the hypodermic injection of ether is not likely to be more useful than either. Strophanthus is the only member of this group which has any pretensions to rival digitalis, yet it is so much more uncertain in its action, and so devoid of tonic properties, that we are not tempted to displace digitalis by it. With attention to the selection of a suitable dose, and with the ordinary precautions which every form of treatment demands, digitalis will do everything that can be reasonably expected of it, and will confer more benefit on cases of cardiac disease than any other drug in the Pharmacopœia; not because it is a diuretic, a sedative or a stimulant to the heart, but because it

maintains and improves its metabolism ; for failure of metabolism is, under all circumstances, the great source of danger to the heart.

In another contribution Balfour[17] presents a practical paper upon the subject of cardiac therapeutics, in which he discusses the best methods of treatment according to his views. He recalls the fact that the drugs employed are few but of extreme value. These are, in addition to digitalis, **Nux Vomica**, which is a most valuable remedy in all cases where the cardiac energy is defective without any evident structural lesion, and which may be continued for a long time—years even—with benefit. He prefers the **Liquor. Strychniæ** (B.P.) in doses of usually 5 minims every twelve hours. **Arsenic**, also, is a valuable heart tonic ; the mode of action of the drug is obscure, but there is no doubt that it does good. Arsenic has a powerful tonic effect on the nervous system, and thus it even relieves the pain of angina. It is seldom advisable in any case, even of slight cardiac failure, to trust to arsenic alone, but it makes a useful adjuvant to other cardiac tonics. **Iron** is well known as a necessary drug in the cardiac failure of young people, and especially in chlorotic females. Digitalis is, of course, the king of cardiac remedies, and the only remedy which, in the possession of reliable properties, comes within a measurable distance to digitalis, is strophanthus. Digitalis is given with these objects in view ; first to improve the nutrition of the myocardium, and thus augment the force of its contractions as well as the energy of the cardiac ganglia ; second, to contract dilated ventricles ; third, to remove dropsy. The tonic action of digitalis is attained by administering it in such a dose, and at such intervals that the quantity of the drug ingested is balanced by that excreted before a second dose is administered. Given in this way there is an improved nutrition of the myocardium which is due to the action of the drug while being slowly excreted. This is accomplished without the slightest risk of any cumulative action of the drug. The dose ordinarily best fitted for this end is a grain of powdered digitalis leaves, or its equivalent in any of the other preparations, every twenty-four or twelve hours, but not oftener. Such a dose may be continued for months or years with nothing but increasing benefit. The various preparations of digitalin, especially Nativelle's granules, and Merck's digitalin in doses of $\frac{1}{100}$ of a grain are very well adapted for producing this tonic action though very unsuited for any other use, as in larger doses they are apt to produce sickness and discomfort.

Flabby and dilated hearts, if not much hypertrophied, and especially if young, may very often be well contracted by larger doses, administered more frequently, as $1\frac{1}{2}$ grains or more, every eight or every four

hours. Such doses, however, require careful watching, as the primary slowing of the pulse, always induced, is apt to pass somewhat suddenly into the allorhythmic pulse of digitalis poisoning—a condition sufficiently distressing, though not dangerous, if the recumbent position be maintained. In aortic regurgitation, when the left ventricle begins to fail, whether the mitral valve has been opened or not, digitalin in large doses, but at some considerable interval between, is imperatively required, and is often of the utmost benefit. For the removal of dropsy some degree of saturation with digitalis is necessary. For this purpose it must be remembered that the equivalent of about 40 grains may usually be given before symptoms of saturation appear. The more rapidly the drug is ingested the more certainly the diuretic action is attained; while, once diuresis has set in, the drug may be stopped for a day or two, and the effect subsequently kept up by smaller doses continued for a longer time. Digitalis is chiefly of use in those with feeble, intermitting pulses and soft and readily pitting limbs. When the pulse is hard and cordy, and the limbs tense and brawny, digitalis is of no use. We must in such cases lower the blood pressure by free purgation, and get some of the fluid away before the drug will act. We may drain the limbs by incision; or we may use **Diuretin**, which is occasionally of great service. But cases of this character are always tedious in treatment and generally unsatisfactory in result. In the removal of dropsy, other diuretics, as **Squill, Broom-tops**, and **Bitartrate of Potassium** are often of great service in combination with digitalis. Purgatives, especially cholagogues, are often of great use in lowering blood pressure and in removing sources of injurious reflex action from the primæ viæ, and are thus frequently of great service in restoring harmony to the movements of an irritable, irregular, heart. Emetics may be of service in hearts of moderate strength when an undigested meal has induced an attack of tachycardia. In these cases there is flatulence, and there is no permanent relief from this flatulence till the stomach is emptied, which, if not done artificially, may in these circumstances take fully twelve hours. **Colchicum** is very useful in the irregularity of gouty hearts, and considerable doses are often required.

The nitrites, and their allies, nitro-glycerine and iodide of potassium, lower the blood pressure and thus enable digitalin to act beneficially in certain conditions where otherwise it does harm. For immediate action in anginous seizures **Amyl Nitrite** or **Nitro-glycerine** is best, but for lasting effect **Iodide of Potassium** is best, since it lowers the blood pressure for a longer period continuously without bad effect, and it is, therefore, most useful in combination with digitalis to prevent that

irritability and increase of dilatation which is apt to follow its use in cases of high blood pressure.

Sedatives, such as the **Bromides,** are often of the greatest service in soothing irritable hearts.

Morphine is the chief narcotic, and is of the greatest service in relieving the pain of angina when it persists after relief to the blood pressure has been secured by nitro-glycerine. It is also the only certain relief to the distressing symptoms of cardiac asthma. We must, however, give large enough doses, beginning with a ¼ or ½ a grain, and giving even more if requisite, running every risk for the sake of giving relief to suffering when that is imperatively required.

Prof. Glax[18] argues in favour of the treatment of cardiac disease with dropsy by the diminution of the amount of fluid ingested. He considers this one of the most important measures in the treatment of chronic heart diseases, and states that this method of treatment is frequently sufficient to re-establish compensatory action of the heart. In many cases, in which internal remedies had no further action, the good effect again became apparent when the quantity of ingested fluids was regulated to correspond with the amount of water excreted.

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HEAT-STROKE. *Græme M. Hammond, M.D., New York.*

Dr. J. W. Crawshaw[1] describes the treatment of a severe case of heat-stroke as follows: The patient's temperature at the time of the stroke was 108° F. His skin was hot and dry, and the pulse rapid, full, and bounding. The patient was stripped as rapidly as possible, and a large piece of ice was placed to his head, and sea water (they were at sea) was brought in buckets and dashed over him in an almost continuous stream. After about twenty minutes of this treatment the temperature had fallen to 103°, and the patient had recovered consciousness. The douching was discontinued, he was placed in bed and given hot tea to drink. A powder containing 5 grains of **Calomel** and 20 grains of **Antipyrin** was given. An hour later the temperature had risen to 105°. He became unconscious and had a convulsion. The

cold douche was re-commenced and continued until the temperature fell to 100·4°. He again recovered consciousness and was then given some milk. The temperature afterwards rose to 103°, but no higher. From this time on he made a rapid recovery.

REFERENCE.—[1] "Lancet," May 20, 1896.

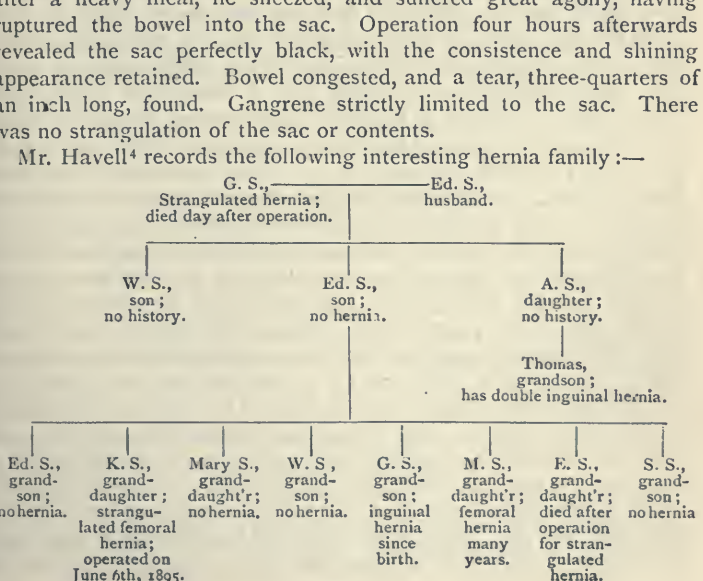
HERNIA. *A. W. Mayo Robson, F.R.C.S.*

Modifications in the operation for radical cure have been suggested by Dr. G. G. Davis,[1] of Philadelphia, who invaginates part of the sac, without ligaturing the neck; and by Dr. Platt,[2] of Baltimore, who has employed a portion of aseptic sponge to occlude the internal ring.

At the Liverpool Medical Institute, February, 1896, Mr. Shelwall Thomas gave a short paper on strangulated hernia, quoting twenty-five consecutive cases, with one death. What he specially urged was thoroughly carbolising (with 1 in 40 carbolic solution) the contents of the sac before attempting reduction.

Mr. Robert Jones[3] related, before the same Society, a case of rapid gangrene of a *hernial sac* in a man aged forty-eight years, who had been subject to a reducible hernia, and had worn a truss. One day, after a heavy meal, he sneezed, and suffered great agony, having ruptured the bowel into the sac. Operation four hours afterwards revealed the sac perfectly black, with the consistence and shining appearance retained. Bowel congested, and a tear, three-quarters of an inch long, found. Gangrene strictly limited to the sac. There was no strangulation of the sac or contents.

Mr. Havell[4] records the following interesting hernia family:—


G. S., Strangulated hernia; died day after operation.
Ed. S., husband.
W. S., son; no history.
Ed. S., son; no hernia.
A. S., daughter; no history.
Thomas, grandson; has double inguinal hernia.
Ed. S., grandson; no hernia.
K. S., granddaughter; strangulated femoral hernia; operated on June 6th, 1895.
Mary S., granddaught'r; no hernia.
W. S., grandson; no hernia.
G. S., grandson; inguinal hernia since birth.
M. S., granddaught'r; femoral hernia many years.
E. S., granddaught'r; died after operation for strangulated hernia.
S. S., grandson; no hernia

Prof. Bollini,[5] Pavia, describes a case of reducible hernia of the left ischiorectal fossa. The tumour was the size of a cocoa-nut, and easily reducible, leaving a depression, in which the closed hand could be inserted. Operation was performed, the patient being placed in the lithotomy position. A vertical incision, parallel with the ascending ramus ischii, across the whole tumour, was made. A mass of fat was removed, the fibres of the levator ani muscle were separated, and the peritoneum opened. The sac contained a loop of small intestine, the left ovary and tube, and part of the sigmoid flexure.

Inguino-perineal Hernia.—At a meeting of the Surgical Society, New York, Dr. W. B. Coley[6] recorded a rare condition, viz., inguino-perineal hernia, in a man aged twenty-two years, who had had a hernia since infancy. The hernia was the size of a cocoa-nut, and associated with a small left inguinal hernia.

The pouch containing the right hernia was entirely separated from the scrotum, and was made up of the skin of the thigh and perineum. The right half of the scrotum was flat and empty, the testis occupying the bottom of the pouch described.

Heather Bigg,[7] in writing to the "British Medical Journal" on hernia, remarks: "Possibly my statistics on the relative frequency of ruptures may be of interest, drawn as they are from many thousand cases. With inguinal hernia, for every hundred men the average comes out thus: right, 37; left, 20; double, 43. Whilst with women the figures are: right, 40; left, 32; double, 28. Further, it is twenty times commoner in men than in women. With femoral hernia the figures are: with women—right, 52; left, 40; double, 8. With men—right, 50; left, 33; double, 17; and it is ten times commoner with women than with men. These figures tally broadly with Lawrence's, although his show inguinal as twenty-five times commoner in men, and femoral as twelve times commoner in women; but the fact that his statistics are hospital ones, and mine private ones, may, by the difference in class, account for this discrepancy. I may add that my statistics do not include the last ten years, because, having found that so many persons with single hernia frequently acquired a double one, I now almost invariably start with a double truss from the very commencement.

"Whilst on the subject of hernia, there is one point which I should like to affirm, because it has not, I think, been yet recognized. It is this, that whereas inguinal hernia, if congenital, is invariably treated by keeping a truss persistently on, and is almost as invariably thereby cured, no attempt seems to be made to deal with an acquired hernia in the same manner. Now I have found that in a very large proportion of these ruptures, if they be recent and oblique, the persistent wearing

of a truss by day and night, in the bath, and at all times, so as to absolutely preclude the hernia from a single chance of descent, will render the canal in about a couple of years impassable, and effect a so-called cure. Of course the parts will be weak, and the continued use of a day truss will be advisable; but that no hernia can be detected I know from the fact that many persons I have so dealt with have satisfactorily passed their physical examination either for the services or for insurance; whilst in a good many instances even the day truss itself has been discarded (against my advice), and only used, perhaps, for violent exercises. It would seem from this, therefore, that the procedure I advocate ought to become a recognized and invariable one."

Tuberculous Hernia.—This has been made the subject of study by Renault.[8] Tubercle developing in a hernial sac or in its contents may assume two forms: (1,) Gross tubercle, or (2,) Miliary. These two forms may be either primary or co-exist with other lesions of the same kind in different organs; and the author points out as curious that femoral hernias are much more rarely tuberculous than inguinal, and that tuberculous, umbilical, or obturator hernias, have never been observed. In general, it is those hernias of long standing that are more likely to become tuberculous. It is probable that the propagation of the tubercle takes place by the intestine, and the author believes that traumatism, being fairly frequent in hernia, may have a marked influence in the development of tubercle. He also suggests that variations in the local circulation may have an important bearing. Tubercle in a hernia may be found in either children or adults, and in the former it is important to bear it in mind, for a child, already the subject of a congenital hernia, may develop tubercle very insidiously, as a slight loss of weight and irritability may be the only general symptoms. Locally there may be an increase in the size of the hernia, and marked pain on palpation, as constituting the only physical signs. That the diagnosis is important is shown by the fact that the tubercle may be confined to the sac and its contents, but can, and often does, spread to the general peritoneum. If diagnosed before extension takes place, it is possible, the author believes, to obtain satisfactory results by treatment. This latter should be the ordinary treatment of hernia, the tubercle under these circumstances appearing to subside, as in the case of a general peritoneal invasion.

Abdominal Section in New-born Infants for Umbilical Hernia.—Marjantschik[9] relates an operation upon a female child aged a little over thirty hours. There was a large umbilical hernia. The liver was almost entirely in the sac, and reduction of the intestines proved very

difficult. The edges of the abdominal wound were vivified, and united by twelve deep and four superficial sutures, the former being passed through all the layers of the parietes. The child took a drachm of chloroform during the fifty-five minutes that the operation lasted. Full antiseptic precautions were taken. The child died on the fifth day. Peritonitis and gastro-colitis were detected. Marjantschik regrets that an enema of 10 minims of cognac, and also 2 drops by the mouth, were given on the third day. To this medication, intended as a stimulant, he attributes the gastro-intestinal inflammation. The spleen was ill-developed. The author tabulates thirty-one cases of abdominal section in new-born infants for hernia funiculi umbilicalis, making thirty-two in all, out of which eight, including his own, died; three died within seven hours; four within five days, one or more of these might have really succumbed to some coincident affection. The eighth (Treves's) died of convulsions on the twenty-third day. Out of the twenty-four recoveries, four were reported as cured within a month (one only a fortnight) of the operation; the remainder seem to have been observed for a longer space of time before their cases were recorded.

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HERPES (Laryngeal and Pharyngeal).

P. Watson Williams, M.D., Lond. (Bristol).

Secretan[1] describes this malady as an acute affection occurring in healthy individuals or among sufferers from chronic laryngitis. It seems at times to be epidemic; at other times sporadic. The onset is usually sudden, with febrile reaction. The general symptoms are the same as those of idiopathic cutaneous herpes. As to local manifestations, they begin with hoarseness, aphonia, lancinating pains, dyspnœa, in fact the usual signs of acute catarrhal laryngitis. Œdema of the larynx may, or may not precede the appearance of the vesicles. The latter rarely exceed more than a dozen in number, are about the size of a millet-seed, and last but little time. Soon they burst and form upon the mucosa small erosions covered with white, adherent crusts (at times hæmorrhagic in appearance), which fall off in five or six days and leave a simple depression. The laryngeal eruption may appear alone, or may be accompanied, preceded, or followed by cutaneous or pharyngeal lesions of the same variety, which of course

greatly facilitate diagnosis. The condition at its onset may easily be confounded with laryngeal diphtheria, but the clearness of the eruption, its lack of progressive confluence, etc., generally permit of correct diagnosis. Prognosis is invariably good.

Brindel [2] has published a report of three cases, in which he says there are on record nineteen cases altogether, certainly a surprisingly small number. Brindel remarks that taking cold is the only cause. His conclusions are as follows: "(*a*,) This affection, which is not so rare as one might suppose, is only one of the localizations, isolated, or associated with herpetic fever; (*b*,) Its most frequent situation is upon the posterior face of the epiglottis and in the vicinity of the arytænoids; (*c*,) It is characterized anatomically by the evolution in these regions of herpetic vesicles surrounded by an inflammatory zone, and clinically by symptoms common to herpetic fever on the one hand, and on the other by dysphagia, by hoarseness, a little dyspnœa—symptoms which may be all present at once, and which are in relation with the localization of the herpes; (*d*,) The invasion is sudden, the progress rapid, the prognosis benign, recovery complete, although recurrence is possible; (*e*,) Only very rarely is herpes of the larynx accompanied by phenomena analogous to those of croup."

Wright has recently had a case in which there was a single vesicle on the posterior surface of the epiglottis, with the constitutional and local symptoms, but without vesicles elsewhere.

TREATMENT.—Secretan recommends **Disinfectant Inhalations, Ice** locally, a **Light Purgative,** and **Confinement to Bed.**

REFERENCES.—[1] "Annales des mal. de l'oreille," etc., 1895, xxi, p. 113, and "Amer. Med. Surg. Bulletin," Jan. 11, 1896; [2] "Revue de laryngologie," etc., No. 6, March 15, 1895, cited by J. Wright, "New York Med. Journ.," Feb. 8, 1896.

HIP-JOINT (Amputation of). (See "Amputations.")

HIRSUTIES. *P. G. Unna, M.D., Hamburg.*
Norman Walker, M.D., Edinburgh.

In the "Medical News," (November 7th, 1896,) Dr. George Jackson has an interesting paper entitled "Too much and Too little hair." The portion on 'too much' has a very interesting account of **Electrolysis,** the only treatment for hirsuties.

His experience showed that there was no traceable connection with uterine troubles. The chin and upper lip are the most common seats. Electrolysis is, he says, almost invariably successful. There is no case, however bad, which cannot be permanently cured. In one case, he removed successfully nearly thirteen thousand hairs from a patient. He recommends that where there are only a few hairs, the work should be

done slowly, and an attempt made to finish it right off. Where they are more numerous, the work should be more rapidly carried out, and repeated. Scarring is, in his experience, quite exceptional, if reasonable care be taken, the upper lip being the most likely seat.

In the "Lancet," of February 15th, 1896, there is an allusion to the fact, that many men refuse to undertake these cases, and the opinion is expressed that this is a mistake, for the patients are sure to go to some quack.

HYDRORRHŒA (Nasal). *P. Watson Williams, M.D., Lond. (Bristol).*

An instructive case of this troublesome, though rare affection is recorded by Poulsson.[1] The patient, a man aged thirty, had had recurring attacks of nervous origin about three or four times in the year ever since he was twelve. The profuse secretion was accompanied by great irritation of the nose, and was preceded by injection of the conjunctivæ and tear secretion. His general health was good, even during the attacks. The attacks became more frequent as he grew older, and the secretion more watery and profuse. At the time of observation the attacks occurred every fortnight, and lasted one or two days. The attack came on, as a rule, in the morning, and ceased quite suddenly in the afternoon of the second day. Within a quarter of an hour the nose was quite dry. The quantity secreted during an attack averaged one litre. The nasal mucous membrane was normal, with the exception of some injection and swelling of the right concha media.

TREATMENT.—Local treatment caused no improvement, but **Atropine** controlled even the most violent attacks within half to one hour. A year after the first observation the attacks had not changed character, but the atropine had still the same effect, and the patient, by watching the prodromal symptoms, was able to regulate the the strength of the dose needed.

Trousseau found constantly that these nervous hydrorrhœas in course of time changed character, and became transformed into a nervous asthma.

REFERENCE.—[1] Epit. "Brit. Med. Journ.," Oct. 26, 1895, and "Norsk Magazin for Loegevidenskaben," June, 1895.

HYPERIDROSIS. *P. G. Unna, M.D., Hamburg.*
Norman Walker, M.D., Edinburgh.

Heubner[1] says that the following treatments act mechanically: **Hebra's Ointment,** 10 per cent. **Caustic Solution**; these remove the epidermis. The disinfecting remedies are alcohol, phenol, sublimate, acetate of lead, Condy's fluid, tar, naphthol, salicylic acid, and bismuth.

The effect of salicylic acid in diminishing sweating is reflex, as is that of many organic and inorganic acids, especially acetic. Chromic acid is dangerous, and may lead to deep ulcers. Perchloride of iron is equally efficacious. **Chloral** in a 5 per cent. solution is a very valuable remedy, probably because the sweat breaks it up to form hydrochloric acid, trichloracetic acid, and formic acid. He advises an alcoholic solution of **Peruvian Balsam**, 10 per cent., **Formic Acid**, 5 per cent. **Chloral**, 5 per cent. In general sweating, spraying with alcoholic solutions of Peruvian balsam, or formic acid, is often sufficient without anything else. Semmola and Gioffridi found that sweating could be checked by the administration of $\frac{1}{20}$ of a grain of **Picrotoxin**, twice daily.

REFERENCE.—[1] "Deut. med. Woch.," 1895, Bd. 44.

HYSTERIA. *Græme M. Hammond, M.D., New York.*

In two cases of hysterical aphonia, Kebbell[1] found the application of **Ethyl Chloride** to the nape of the neck gave almost immediate relief. It was applied suddenly to the extent of making a frozen patch the size of a shilling, and repeated, if necessary. Complete etherization of the patient has also been found very effective. Probably both of these methods depend for their efficacy upon the profound mental impression they produce. Strong currents of Faradic or galvanic electricity applied directly to the throat have also, and for the same reason, been recommended. The same methods of treatment may with equal reason and success be utilized in hysterical paralyses and contractures in any part of the body.

REFERENCE.—[1] "Lancet," June, 1896.

IDIOTS AND MENTALLY DEFICIENT CHILDREN.

G. E. Shuttleworth, B.A., M.D.

The subject of the treatment and training of mentally deficient children, under which designation may be included the various gradations of idiots, imbeciles, and feeble-minded, has of late years come somewhat prominently before the public and the profession. A Royal Commission (under the presidency of Lord Egerton of Tatton) reported in 1889 on the educational necessities of this class; and an investigation of the mental and physical condition of school children by a Committee, originally appointed in 1888 by the British Medical Association, has recently culminated in a comprehensive report founded on a superficial examination of 100,000 children, with detailed statistics of defects noted in 18,127 cases.[1] From the practical side the matter has also been approached by the London School Board, who since 1892 have established throughout the metropolitan

area centres for special instruction of children who, by reason of physical or mental defects, could not be properly taught in the ordinary standards or by ordinary methods. Similar classes have been established at Leicester, Birmingham, Brighton, Bradford, and Bristol, and the movement bids fair to spread throughout the country. These classes are intended for children mentally feeble or otherwise exceptional, not for idiots or imbeciles certifiable under the act of 1886, who should find appropriate accommodation in special training institutions.[2]

The difference between the several grades of mental deficiency just referred to is, however, only a matter of degree, depending upon the intensity of the cause operating in each case. The three classes of idiots, imbeciles, and feeble-minded, indeed, run into each other by insensible gradations, and although of late years special attention has been devoted to the physical diagnostics of the last-named by Dr. Warner and others, the several grades have been recognized for at least half a century, as may be seen on perusal of Séguin's classical work published in 1846.[3]

In the present article it is intended to deal only with certain points which it is important that the family physician should know in regard to what may be done for a mentally deficient child in whose case he is consulted. The prognosis will as a rule vary with the degree of deficiency; but it is not always the case that the worst-looking child is the worst subject for training. Indeed, as long ago pointed out by the late Dr. Langdon-Down, speaking generally, "the prognosis is, contrary to what is so often thought, inversely as the child is comely, fair to look upon, and winsome."[4] The explanation of the paradox is that congenital cases have usually ill-formed features and a peculiar expression, but improve under conditions favouring development; whereas, in acquired and accidental cases, the good original physiognomy may be retained in spite of an irremediable cerebral lesion. We meet, however, occasionally with mild cases of traumatic imbecility in which prognosis is more favourable, especially in these days of brain-surgery; but for operative measures to prove satisfactory, it is important that they should not be deferred until structural brain changes have become chronic.

The varieties of facial expression found in the various forms of psychical defect have already been described and illustrated in this work,[5] and an article by the present writer on new medical and surgical methods employed in the treatment of such defects appeared in the volume for 1895.[6] At present it must suffice briefly to point out the more salient features of the characteristic types in so far as their recognition may be an aid to appropriate treatment.

Taking first those types characterised by cranial abnormality, we find "heads sometimes so little that there is no room for wit" (as Fuller quaintly remarks), and in *microcephalus* the cranial circumference may be fifteen inches or less, whilst the microcephalic conformation of head may be traced in cases measuring up to twenty inches by the narrow, receding forehead, the tapering vertex, and the flattened occiput of this variety. Considerable differences of intelligence are found in this type, according to the degree of defect; but the senses and other observing powers are usually good, and in higher-grade cases useful results may be obtained from industrial training. The lowest cases are often speechless and ineducable; and in such the operation of craniectomy has been tried with the idea of relieving pressure and promoting brain development, with, however, but meagre results.[7]

Cases of *hydrocephalic* origin present very different degrees of mental enfeeblement; and globular heads of this type are found measuring from twenty-four to thirty (or even more) inches in circumference. It is of course only when active symptoms have subsided, that educational methods are admissible; but excellent results frequently follow training in mild cases of this type, provided there is no epilepsy. Not so, however, with the piled-up voluminous heads of the so-called *hypertrophic* type, in which maniacal symptoms sometimes supervene. In the *Mongol* variety—so designated in consequence of physiognomical resemblances to the Mongolian race—the skull is a short oval, the eyes often obliquely set, the skin and mucous membranes coarse in finish, and the cerebral convolutions also coarse and rudimentary. As in this type considerable powers of mimicry exist, simple, imitative exercises are readily taken up, and when the flimsy fingers are strengthened, some degree of mechanical skill may be attained; but there is a tendency to tubercle, and a defective circulation calls for specially guarding against chills. A certain progress in reading, writing, and drawing may be looked for under training; the calculating powers will always remain feeble. Signs of scrofula are often associated with these cases, and indicate the liberal use of **Cod-liver Oil, Maltine,** and the **Hypophosphites.**

Cases of mental enfeeblement due to *birth palsy* exhibit varying degrees of mental incapacity, depending upon the degree and locality of the pressure which has caused the paralysis. In most cases the loss of intelligence is more apparent than real, the defect being in fact muscular rather than mental; and when training has disciplined the muscles, a fair amount of intellectual power may be manifested by ability to make calculations, as well as to write and draw well. Speech

may, however, remain absent or irremediably defective. Much, however, may be effected in this class by appropriate physical training and judicious education.

The character of *sporadic cretinism*, or as it has been called by Bourneville *myxœdematous idiocy*, has been so much before the profession in connexion with thyroid treatment, that it seems unnecessary to do more than refer the readers of the "Medical Annual" to an account of it in that publication for 1895,[8] and to the discussion at Carlisle last July, fully reported in the "British Medical Journal."[9] Experience shows that results little short of marvellous have followed **Thyroid Treatment** in appropriate cases; but the mental improvement, though marked, is probably limited by original imperfect formation of brain, whilst physical growth is so rapid as to entail the risk of rickety distortions of bones prematurely subjected to too much exercise.

Cases characterised by mental instability due to neurotic heredity (and hence designated *primarily neurotic*), may be benefited by removal from injurious home surroundings to judicious care; and regular routine will itself tend to calm irritability, though at first the administration of **Bromides, Paraldehyde, Sulphonal,** etc., may be necessary to break through habits of unrest. The risk of overstrain (with choreic or neurasthenic symptoms) must be borne in mind, so that processes of education must be carefully adapted to the individual case.

Cases of mental impairment from *eclampsia* or *epilepsy* call for appropriate medical treatment, so long as a tendency to convulsion persists; and the same considerations as regards education just urged in the case of neurotic children, apply to them also. As a rule epileptic imbecility is unsatisfactory to deal with while there is a recurrence of fits; but when these have ceased considerable improvement often occurs. Physical and manual training, and especially out-door work, are in such cases preferable to book-learning.

Juvenile dementia, due to *inherited syphilis*, is occasionally met with, and as a rule treatment is not of much avail, though **Mercurials** and **Iodide** may be tried. Such cases are inappropriate for educational training.

As regards cases arising from *injury* to the head, it is obvious that surgical aid should be afforded at an early stage, and that mental symptoms are not likely to be relieved by operation after degenerative changes in the brain-cells have resulted from long-continued pressure. Mild cases of traumatic imbecility sometimes improve remarkably if proper training is given during the period of growth and development. Cases of mental deficiency resulting from *inflammation* of the brain or its membranes in the course of the diseases of childhood are

PLATE IX.

as a rule unfavourable cases for treatment, though the degree of damage has in each to be considered.

A few general remarks as to the treatment and training of mentally deficient children must close this paper. The common fallacy that at some critical age (*e.g.*, seven, fourteen, or twenty-one), the case will come right of itself must be condemned, as under such a delusion valuable time for training is sometimes thrown away. From the nature of the case, progressive deterioration is likely to occur in the absence of appropriate education, and bad habits may become so confirmed as to be ineradicable. Co-education with normal children, though theoretically plausible, is usually impracticable, and the spirit of emulation, so valuable for progress, can be best encouraged by competition with compeers. Special classes, therefore, are necessary for the instruction of mentally-deficient children ; and their instructors must be trained in the special methods appropriate to the different abnormalities met with. While valuable hints may be drawn from the Kindergarten system, this alone is not sufficient ; devices for overcoming incapacities and concentrating the attention are especially called for. The brain may often be got at by the avenue of the fingers more readily than by the accustomed routes ; hence the paramount importance of manual and industrial training, not so much for the sake of what is produced, as for the effort of intelligence which is aroused. Readers who wish to know more of the details of instruction (both scholastic and industrial), are referred to a little work on the subject by the present writer.[10]

REFERENCES.—[1] "Report on Scientific Study of the Mental and Physical Conditions of Childhood," published by the Committee, Parkes Museum, Margaret St., W. ; [2] *Vide* list in "Medical Annual;" [3] "Traitement Moral, Hygiène et Education des Idiots et des Autres Enfants arrières," Paris, 1846; [4] "Obstetric Transact.," vol. xviii.; [5] "Medical Annual," 1894, p. 369; [6] Ibid., 1895, p. 324 ; [7] "The Surgical Treatment of Idiocy," G. E. Shuttleworth, "Journ. Mental Sci.," Jan., 1896 ; [8] "Medical Annual," 1895, p. 324 ; [9] "Brit. Med. Journ.," Sept. 11, 1896 ; [10] "Mentally-Deficient Children ; Their Treatment and Training," G. E. Shuttleworth, B A., M.D., H. K. Lewis, London.

IMPETIGO CONTAGIOSA ANNULATA. *P. G. Unna, M.D., Hamburg.* *Norman Walker, M.D., Edinburgh.*

Schamberg[1] describes a case of impetigo which spread in rings. He alludes to a case figured in Rarey's Atlas, where the term pustular ringworm follows the name in brackets. The patient had spots of impetigo contagiosa in other parts.

The photograph (*Plate IX.,*) illustrates a case under N. Walker's own care, which was undoubtedly a case of this disease. The child

was ten weeks old, and the disease disappeared in the course of ten days, under a very mild antiseptic ointment.

Football Impetigo.—Mr. H. G. Armstrong[2] Medical Officer to Wellington College, has drawn attention to an already recognized condition of football impetigo. It is naturally confined to those who play the Rugby game, and the 'Backs' are usually free. He recommends that the 'Forwards' should wear ear pieces.

REFERENCES.—[1] "Journ. Cut. Diseases," May, 1896; [2] "Brit. Med. Journ.," Feb. 8, 1896.

INFLAMMATIONS (Phlegmonous). (See "Phlegmonous Inflammations.")

INFLUENZA. *F. de Havilland Hall, M.D., F.R.C.P.*

Among the protean manifestations of this erratic disease, affections of the eye and ear require attention. Eye affections follow or complicate influenza much less frequently than do those of the ear; nevertheless, they are not very uncommon. Purulent inflammation of the eyeball, with orbital cellulitis commencing on the second day of an attack of influenza, has been recorded. Conjunctivitis of all degrees of severity is common; iritis has been met with.

Of the ear affections, the most frequent is suppurative inflammation of the middle ear, probably in the majority of cases secondary to the throat lesion. This inflammation is characterized by great severity and persistency, the pain being usually intense and hard to control, the suppuration prolonged and hearing much impaired; there is a marked tendency to the formation of mastoid abscess. Dr. Heath[1] advises syringing with **Hot Salt Water, Anodynes** and **Febrifuges** as indicated, together with local use of **Iodine,** local **Bloodletting** with Bacon's artificial leech, and **Iodide of Potassium** in full doses. Occasionally it is necessary to perform paracentesis of the drum-membrane. Hot applications to the mastoid are usually to be employed. In contradistinction to the view of most English surgeons, he states that operation upon the mastoid in these cases is not so generally necessary as has been laid down.

R. Drews[2] recommends **Salophen** in the nervous form of influenza, *i.e.*, in cases in which headache, vertigo, prostration, and more or less sweating, together with pains in the back and neuralgias exist. The maximum daily dose given is 5 to 6 grammes, (75 to 90 grains). In delicate subjects 0·5 gramme or 0·75 gramme, given at first every two or three hours, suffices to arrest the neuralgic pains in two or three days. No unpleasant symptoms were ever observed. Salophen is tasteless and inodorous; almost insoluble in water, it should therefore be administered in cachets.

Phocomelus of right arm in an epileptic girl. Right humerus several inches shorter than left. Movements of arms perfect on both sides.

Plicque[3] insists on the importance of antiseptic treatment to the nose, mouth, and pharynx—**Boracic Vaseline** to the nasal cavities, **Boracic Acid Gargle.** He believes that this does much to avoid complications.

For the cardiac form he advises **Dry Cupping, Sinapisms,** subcutaneous injections of **Caffeine** and **Ether,** or of **Camphorated Oil** (sterilized olive oil 2½ drachms, camphor 30 grains).

In the gastro-intestinal form, attended with diarrhœa, he recommends intestinal antiseptics (**Salol, Naphthol,** and **Salicylate of Bismuth**).

During convalescence high altitudes are better than sea air.

REFERENCES.—[1]"Medical Age," Jan. 10, 1896; [2]"Brit. Med. Journ.," Feb. 1, 1896; [3]"Therap. Gaz.," July 15, 1895.

INSANITY. *James Shaw, M.D.*

Diagnosis.—Peterson,[1] of New York, who has been afforded unusual facilities for the study of the subject of *degeneracy* in connection with work in reformatories, prisons, asylums, and institutions for idiots, believes that a thorough understanding of the various *indices of degeneration* would be of value to the general practitioner, who might do an untold amount of good by calling attention to an indication of a degenerative proclivity in some youthful member of a family—a discovery occasionally of enormous significance as regards prophylaxis, education, and care.

Degeneracy may be defined as a marked deviation from the normal original type or standard. We recognize it, as a rule, in its effects upon the intellectual life, in the deviations from the intellectual and social conduct which we hold in common with our fellows. To the class of degenerates belong not only many criminals, idiots, and insane individuals, but also the great majority of eccentric persons—those whom we characterize as feeble-minded, odd, quaint, queer, or singular.

Eccentricity of intellectual habit or conduct may be observed in men of talent or genius who are not degenerates, but when combined with morbid self-concentration it warrants a grave diagnosis. One of the essential characteristics of degeneracy is its inclusion of elements transmissible to the offspring.

The indications of degeneracy are known as stigmata-hereditatis or *stigmata of degeneration.* They may be defined as anatomical or functional deviations from the normal, which in themselves are usually of little importance as regards the existence of an organism, but are characteristic of a marked or latent neuropathic disposition.

These stigmata are vices of functional and organic evolution—excesses or arrest of development—and must be distinguished from the deficiencies or deformities produced by accidents at birth or by disease.

The functional stigmata may be divided into physiological and psychical. Defect of moral sense, of attention, of memory, of will, or of judgment, or unbalanced excess of musical or mathematical aptitudes may be cited as instances of psychical stigmata.

*Anatomical Stigmata:** Cranial anomalies, such as asymmetry and various deformities, facial asymmetry (congenital, *Fig. A*, *Plate XI*, and *Fig. C*, *Plate XV*), with this may be grouped excessive prognathism, retrognathism, or malar prominence; deformities of the palate, such as bifid uvula (for anomalies of hard palate, see below); dental anomalies, such as macrodontism, microdontism, projecting, badly placed, or misplaced teeth, double row of teeth, striated teeth, Hutchinson's teeth (often), retardation of dentition; anomalies of tongue and lips, macroglossus, microglossus, asymmetrical or bifid tongue, undue swelling or puffiness of lips, hare-lip doubtful as stigma; anomalies of nose, marked lateral deviation, absence of nose, defective osseous development, atresia of fossæ; anomalies of the eye, flecks on the iris, strabismus, chromatic asymmetry of the iris, narrow palpebral fissures, albinism, congenital cataracts, microphthalmos, pigmentary retinitis, muscular insufficiency; anomalies of the ear (see below); anomalies of the limbs, polydactyly, syndactyly, ectrodactyly, missing limbs (ectromelus), symelus, phocomelus (*Plate X*), anomalous brevity of some digits, megalomelus, megalodactyly, oligomelus, oligodactyly; anomalies of the body in general, dwarfishness, giantism, infantilism, feminism, masculinism, spina bifida, lordosis, scoliosis, kyphosis, peculiarities of coccyx (tail-like), malformations of the breasts or thorax, hernias; anomalies of the genital organs, cryptorchism, microrchidia, spurious hermaphroditism, insufficient development of genital apparatus, hypospadias, epispadias, defect or great volume of prepuce, median fissure of scrotum, imperforate meatus, abnormally large or small labia, very large clitoris or labia minora, folds between labia majora and minora, pigmentation of latter, imperforate vulva, atresiæ vaginæ, double vagina, uterus bicornis; anomalies of the skin, adipose thickening, polysarcia, precocious development of the hairy system, hair along spinal column, glabrous chin in grown men (*Fig. A*, *Plate XI*), persistent lanuginous character of hair, excessive

* The blocks to illustrate the Stigmata of Degeneration have been kindly lent by Dr. F. Peterson and the Editors of the "State Hospitals Bulletin."

PLATE XI.

Fig. A.—Male epileptic, aged 40 years, with glabrous face and chin, and facial asymmetry.

Fig. B.—Female imbecile, aged 40 years, with hypertrichosis.

growth of hair on chin (*Fig. B, Plate XI*) and breast in women, complete or partial decolouration of hair, partial or complete absence or fœtal state of the nails, melanism of the skin, pigmentary or vascular nævi, molluscum, ichthyosis, vitiligo, albinism, pigmented spots.

Physiological Stigmata: Anomalies of motor function, retardation of learning to walk, also, when ordinary etiological factors may be excluded, tremors, tics, epilepsy, and nystagmus (even when not congenital these often indicate hereditary instability of the nervous system); anomalies of sensory function, deaf-mutism, neuralgia, migraine, anæsthesia, hyperæsthesia, blindness, myopia, hypermetropia, astigmatism, Daltonism, hemeralopia, concentric limitation of the visual field; anomalies of speech, delay in acquisition, mutism, partial defect, questionable whether stammering and stuttering are stigmata, but they are most often found in children with neuropathic inheritance; anomalies of genito-urinary function, sexual irritability, impotence, sterility, urinary incontinence, and, especially in the male, retardation of puberty; anomalies of instinct or appetite, uncontrollable appetites (food, liquor, drugs), merycism; miscellaneous anomalies, diminished resistance against external influences (strains, etc.) and diseases, great precocity of intellectual development and of certain aptitudes, morbid emotional conditions.

Psychical Stigmata: Insanity; idiocy; imbecility; feeble-mindedness; eccentricity; moral delinquency; sexual perversion.

Deformities of the Palate.—Peterson holds that the deformed palate is one of the chief anatomical stigmata of degeneration. It is true that from this single indication it would not be strictly scientific to adjudge an individual a degenerate. Occasionally, perhaps, a case presents itself where this anatomical stigma alone would suffice to ensure a diagnosis of this nature, but usually other stigmata co-exist. Charon found abnormal palates in 10 per cent. of apparently normal people, in 82 per cent. of idiots and feeble-minded, in 76 per cent. of epileptics, in 80 per cent. of cases of insanity in general, in 70 per cent. of the hysterical insane, and in 35 per cent. of cases of general paralysis.

The arch of the hard palate presents considerable variation within strictly normal anatomical limits. A large, wide, moderately high vault is what may be called a normal standard. It means the highest evolution, judging from the fact that the mouth cavity increases in capacity as we ascend the vertebrate series. Deviations from that standard are not at all infrequent, and yet such deviations may be normal. Thus the palate may be low and broad, or it may be high and narrow; it may be short or long in its antero-posterior diameter; it may be ridged unduly along the palantine sutures, or it may present

marked rugosities on its surface, especially in the anterior region; yet these variations are normal.

Peterson's classification of pathological palates (*Plate XII*) is as follows: (1,) Palate with Gothic arch ("Gothic" palate, *Fig. A*); (2,) Palate with horseshoe arch (*Fig. B*); (3,) The dome-shaped palate (*Fig. C*); (4,) The flat-roofed palate (*Fig. D*); (5,) The hip-roofed palate (*Fig. E*); (6,) The asymmetrical palate (*Fig. F*); (7,) The torus palatinous (*Fig. G*). The seven varieties named are to be looked upon as types merely. Each type will be found to present variations and combinations with other forms. Thus, the Gothic arch may have a low or high pitch and be short or long. The flat-roofed palate may be nearly horizontal, or it may have sloping sides (*Fig. D, Plate XII*). The dome-shaped palate may be high or low, may be combined with asymmetry or torus. The torus is a projecting ridge or swelling along the palantine suture, sometimes in its whole length, sometimes in a portion of its course. It varies considerably in its shape and size, so that as many as five or six different species of torus are recognized. It may be wedge-shaped, narrow, broad, very prominent, or irregular. It may cause the Gothic arch to resemble the flat-roofed palate. The torus is always congenital, but probably has less importance as an index of degeneration than some of the other forms of pathological palate. The hip-roofed palate has sloping sides, and a marked pitch in front and behind; occasionally the antero-posterior pitch is so marked as to almost resemble that of a Gothic roof turned transversely.

Peterson is not sure that cleft palate may be classed among the well marked stigmata of degeneration.

The palatal should not be confounded with the dental arch, as it sometimes is in literature.

Anomalies of the Ear.—Deformities of the ear have been deservedly well studied, for as stigmata of degeneration they take high rank, like anomalies of the hard palate, in the most important—the anatomical—group. Morel, Stahl, Wildermuth, Binder, and Schwalbe, have given us especially good studies of these conditions.

Peterson (following Binder) classifies the anomalies of the ear into twenty-two varieties. For the description of these the original article must be consulted. He gives the following summary of the most important malformations of the ear (*Plates XIII, XIV*)—those that may be regarded as belonging to the stigmata of degeneration, and those, too, which are striking and plain to the eye: The deep position of the crus anterius; marked prominence of the antihelix (as in Wildermuth ear, No. 1, *Fig. C*); excessive broadening of the ear; stunted development of or absence of the helix (as in Stahl ear, No. 1,

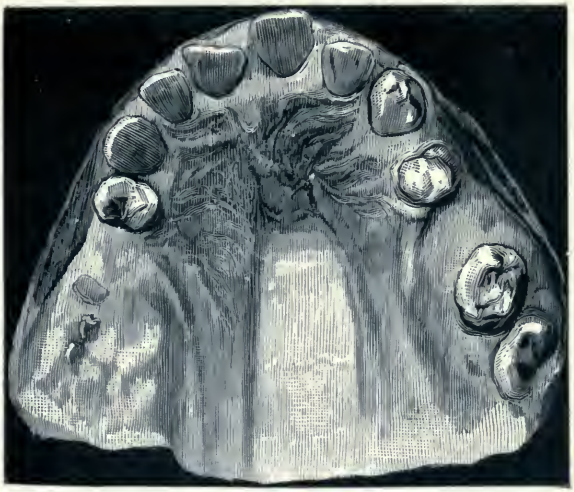

Fig. D.

Fig. G.

Fig. I); trifurcation of the antihelix (as in *Fig. E*), widening of the fossa scaphoidea; absence of the crus superius (as in *Fig. A*); complete absence of lobule (as in *Figs. B, C, E, H*); asymmetry of the two ears (Blainville ears, as in *Fig. B, Plate XV*); excessive enlargement or diminution of the concha (as in *Figs. A, B, C, Plate XIII*); excessive conchoidal structure of ear (as in *Fig. A, Plate XV*). Reference is occasionally made in literature to the Cagot ear. The Cagot is a species of cretin in the French and Spanish Pyrenees, in which one of the chief physical deformities is absence of the lobule of the ear. *Figs. G* (*Plate XIV*) and *B, C* (*Plate XV*) illustrate excessive length of ear.

Binder states that the adherent lobule exists in almost one third of normal people, and in the photographs of several hundred distinguished people 15 per cent. had abnormal lobules. At the same time more than twice as many adherent lobules are found in degenerates as in normal people. Binder found 64 per cent. of degenerate ears in three hundred and fifty-four insane persons. Knecht found 20 per cent. of degenerate ears among one thousand two hundred and seventy-four criminals, 27 per cent. among forty-eight epileptics, and 32 per cent. among eighty-four insane.

Binder noted degenerate ears in thirty-three persons outside of institutions, supposed to be normal individuals. Enquiring closely into their histories, he discovered that seven of them had near relatives insane; in nineteen there were decided psychic abnormalities, and only seven were apparently normal people.

In concluding his paper Peterson remarks that what is bequeathed to the degenerate child is a fragile and unstable nervous constitution. The evidence of this inherited fragility of the nerve mechanism may present itself as insanity, or it may be epilepsy, or it may be feeble-mindedness, or it may be criminal tendencies, or it may be simple nervousness, or hysteria, or certain kinds of headache, or possibly only eccentricity. All of these disorders are more or less interchangeable, and are merely proofs of an unstable nervous organization. Where such conditions do not develop they may still exist in a latent state, and pass as a legacy to another generation. Whether the neuropathic state be manifest or latent, we are apt to find anatomical stigmata of degeneration present on careful examination.

Schwalbe[2] remarks that Gredenigo has enumerated twenty-three categories of ears, and examined twenty-five thousand men and women in Turin, eight hundred lunatics, and four hundred and sixty-seven criminals, finding very little difference in the form of the ears in these three classes; while Vali found the Darwinian tubercle (*Fig. D, Plate*

XIII, and *Fig. F, Plate XIV*) thrice as common in insane persons and idiots. Schwalbe thinks this difference of result must be due to race, as he finds a difference on this point between the inhabitants of Lower Alsace and those of Lorraine, Upper Alsace, the Palatinate, and Baden. Schaffer found that 55 per cent. of Englishmen had the Darwinian tubercle. So that lunatics, criminals, and sane people, when their ear forms are compared, should all belong to the same race.

Dana[3] found deformities of the uvula in fifty-three out of one hundred and eight insane patients. Thirty-two had the uvula twisted to one side, the left a little the oftener. Nineteen of these patients were found among thirty-five cases of degenerative insanity. The degenerate uvula is one that has an unequal and defective nerve supply.

Clouston[4] attaches much importance to physiognomical diagnosis. There are, he says, two foundations of all physiognomical diagnosis. One rests on the effect of local or general disease on the features, attitude, skin, and eye through the brain cortex; the other on diathetic signs. The nervous diathesis is usually characterized by medium stature, small muscular development, spare habits, features marked and expressive, muscular movements in health abrupt and energetic, sensory power keen, reactive power to impressions from within and without quick and intense.

For illustrations of facial expression in various forms of mental disease, see "Medical Annual," 1894 (page 344).

On the subject of the prevention of insanity in general, Toulouse,[5] while deprecating legislative intervention in the marriages between persons with hereditary taint, our knowledge of heredity being as yet insufficient, observes that a medical examination before marriage might perhaps guard against "pathological surprises." Alcoholics should be separated. Further, the poor—poverty being the main cause of the dyscrasia potatorum—ought to be assisted, as also the aged, the widowed, the orphaned. Against alcoholism, the radical remedy—enforced abstinence—being not yet practicable, the next best should be applied, viz., to insist on all alcoholic drinks being pure, and to restrict their consumption.

The care of the pauper or State-supported insane in *private families* and in *colonies*, has extended considerably of late, and, from the reports given by many eminent alienists, appears to be successful and from many points of view advantageous. Conolly Norman[6] remarks that a large number of chronic cases do not require the special treatment of an asylum, and could very well be dealt with outside if some provision could be made by which they would be

certain to receive that amount of care which anyone not in the full possession of his faculties must necessarily require. The question arises whether any habitation can be provided for certain classes of the insane much less expensive than an asylum, and offering as a compensation for its cheapness, a larger amount of liberty.

It was thought at one time that the Gheel system was not applicable elsewhere. Yet Gheel has been imitated, and with success. In April, 1884, two men and two women were sent from Gheel to Lierneux in the province of Liège. They were working patients of the quietest class. At the end of 1892 the colony contained three hundred and forty-nine patients. Four men and two women were paying patients, the rest were supported by the public. All classes of the insane are admissible to Lierneux, except the suicidal, homicidal, incendiaries, those who are apt to offend against public decency, and "those in whom it is necessary to employ continuous mechanical restraint." The State pays for public patients who work, 90 centimes each per diem ; for those who do not work, 1 franc. The reception of lunatics has become popular among the sane population. The hosts are carefully selected, and the most thorough supervision is bestowed upon the patients.

The French, emulating the example of Lierneux, have established a colony for senile dements at the small town of Dun-le-Roi. The French law forbids the settlement of lunatics under public care in any places except asylums. Senile dements are held not to come under this rubric. During the first year and a half of the colony's existence, one hundred and forty-three patients were received. Of these thirteen were sent back to asylums, six died, and one escaped, leaving one hundred and twenty-three in residence in August, 1894. The capitation cost per diem was 1 franc 94 c., and it was calculated that when the number rose to two hundred, this would sink to 1 franc 55 c. The capitation cost in the asylums of the department of the Seine varied from 2 francs 90 c. at St. Anne ; to 2 francs 10 c. at the Salpêtrière. There is an infirmary with twenty beds, for new comers, for the sick, and for those who prove unsuitable for the colony, till such times as they can be removed to one of the asylums. The patients are generally very happy and contented. They appear to be well cared for, and no accident or scandal has occurred.

The Scottish boarding-out method of dealing with harmless lunatics differs from that of Gheel, Lierneux, and Dun-le-Roi, inasmuch as there is no distinct colony, and patients are settled wherever it happens to be convenient to place them. They are visited once a year by the Assistant Commissioner of Lunacy, and once a quarter

by the parish doctor. (Upwards of 23 per cent. have been so boarded out for some years past.)

In Berlin, some years ago, owing to the pressing demand for increased asylum accommodation, the plan was devised by the authorities of the asylum for the Berlin district at Dalldorf of boarding out a number of patients. These patients are scattered all through Berlin and its suburbs. They are boarded some with relatives, some with strangers. The asylum provides the patients with clothes, and pays a sum for his maintenance. He is seen at his host's residence by a medical officer of the asylum, at least once a month, and is required—unless in certain exceptional cases—to visit the asylum once a month, and be seen by one of the medical officers. During the year 1891–1892, two hundred and fifty-four patients were placed in domestic care; two hundred and one were removed from it. Of the latter number one hundred and seven were sent back to the institution, while ninety-four became well enough to cease to need supervision, and to be removed altogether from the roll of pauper lunatics. The average annual cost per head of the patients in the Dalldorf asylum for the year 1891-92 was £38 6s.; of the boarded-out, £21 19s.

Norman concludes that if the organised domestic care of the insane could be adopted in this country, under such limitations as local circumstances may require, it might prove not only beneficial to the insane, but a source of considerable saving to the public. He thinks that in Ireland peculiar facilities exist for working out a system of family care of the insane.

Bresler[7] speaks well of the Scottish system, and states that in Germany Bremen led the way in a modified imitation of it. The Bremen patients may not be boarded out until they have passed a period of fourteen days' observation within the local asylum. In the neighbouring villages forty-seven women and twenty-eight men were boarded out in the year 1892. In Hanover the results of boarding-out are decidedly encouraging. There are about one hundred and twenty male patients now boarded out in the parish of Ilten, at £13 10s. per annum each. The sane population are comfortably well off, and maintain an intelligent interest in the work. In Berlin there is a general consensus of opinion that, in spite of some mishaps, there is every reason to be satisfied with the new departure, and to enlarge the area of its operations. In Silesia the results are reassuring, and testify to the vitality of the boarding-out system. In East Prussia the number of suitable cases has proved to be very small, but the system has abundantly vindicated its *raison d'être*. Bresler says, in conclusion, that in the endeavour to extend medico-psychology across

PLATE XIII.

Fig. A.—No crus superius; no antihelix; small fossa concha; few details of ear.

Fig B.—No lobule; almost no fossa concha; shallow fossa scaphoidea; fusion of helix, antihelix, and antitragus. A type of Stahl ear No. 3

Fig. C.—Prominent antihelix; mal-developed helix; absence of lobule; diminution of the concha. Wildermuth ear No. 1.

Fig. D.—Darwin ear in an epileptic.
× Darwinian tubercule.

the narrow boundary of the asylum walls, and to open up the treatment of insanity to the world of humanity, a wise organization is the first necessity.

In Russia, also, after a lively opposition by the advocates of agricultural colonies, which had succeeded in a number of departments, the boarding-out system has been established in the government of Ekaterinoslav in connection with the departmental asylum. Gowsjeew[8] tells us that the experiment, commenced so recently as 1893, has been a complete success. On the 1st May, 1895, eighty men and forty-nine women were placed with peasants living in the vicinity of the town of Ekaterinoslav. The results obtained so far are very satisfactory both from an economical and a therapeutical point of view. Gowsjeew thinks that the boarding-out system is preferable, at all events in Russia, to agricultural colonies for the insane.

Toulouse[9] expresses himself very much in favour of the family care of the insane. The system gives good results everywhere, and makes great progress. The disadvantages are capable of being minimised.

At the British Medical Meeting, July, 1896, Turnbull, Urquhart, and G. M. Robertson [10] spoke well of the boarding-out system as a mode of providing for the chronic pauper insane. The two former alienists and Carlyle Johnstone considered that boarded-out patients should be under the supervision of the asylum medical officer.

(In England and Wales, the insane residuum—the surplus of the total admissions over the discharges and deaths—is now considerably over two thousand a year, and is more likely to increase than to diminish yearly for some time to come. This means an annual outlay of upwards of £300,000 to build and equip new asylums, apart altogether from the cost of maintenance. In Ireland, while the sane population is steadily diminishing through emigration, which affects most the young, strong, and healthy, the insane population is as steadily accumulating and overcrowding the existing institutions, so that to keep pace with it an average annual outlay of about £40,000—allowing £100 for each bed instead of £150 as in England—will be required for building and furnishing alone. Domestic care of the insane, apart from other advantages, would enable the public to save much or all of this expenditure.—J. S.)

Rayner,[11] referring more especially to private patients, in a discussion on the certification of insanity, at the meeting of the British Medical Association, in July, 1896, said that there should be devised some procedure which, without entailing certification or any evasion of the law, would permit the treatment of incipient cases of mental disorder for a limited period in suitable houses

or reception hospitals. Yellowlees said that in Scotland they had this very provision. On the strength of a certificate by a medical man giving a simple expression of opinion that a mentally affected person would be benefited by treatment and care, the patient could be sent to a private house for a period of six months, and there treated and cared for without the stigma of legal certification, and without his name being put upon any legal register whatever. As far as he knew the system had never been abused. Norman Kerr, whilst corroborating these statements, thought there was a large class of cases which were not covered by this provision; so that some further provision was needed for a probationary term of curative treatment, with skilled scientific care and attendance. Urquhart was in favour of a reception house where it would be possible to record the state of such patients before they were finally sent to an asylum.

At the Bristol meeting of the British Medical Association,[12] and again at the Liverpool Congress of the Sanitary Institute,[13] J. Shaw recommended, for the treatment of incipient and non-certifiable mental cases, the establishment of semi-charitable institutions on the lines of the existing convalescent homes, but with a maximum period of residence of at least six months.

The *surgical treatment* of insanity (including idiocy), while often very successful, is still in some of its aspects *sub judice.*

A case of melancholia dependent upon ethmoidal disease, and cured by intra-nasal operation, has been recently reported by Bosworth.[14]

Cale[15] reports two cases of traumatic insanity, one of several years', the other of a few weeks' duration, cured by removing a small piece of bone from the site of injury. The length of time which has elapsed since the operations—four and three years respectively—warrants the statement that both patients have been entirely cured.

Operations for the removal of tumours of the brain are neither rare nor of recent introduction, but those for tumours with mental symptoms are not common. Kappeler[16] describes one in which an epithelioma, nearly as large as a duck's egg, was removed from the upper part of the fissure of Rolando, with the result that the patient was decidedly improved both mentally and physically. He had no more fits nor headaches, and less paresis in the arm and leg, so that he could work a little.

Dana[17] holds that craniectomy for idiocy is still justifiable in a certain selected class of cases. From the study of an extensive series of cases, including his own, he is led to believe that the clinical reports show improvement too often for the facts to be ignored, and that by perfected methods of operating, the danger to life is under 5

per cent., and will probably become less still. The cases in which the operation is indicated are generally those of cerebral agenesis, rather than those having extensive sclerotic lesions and palsies. The best chances for improvement will be obtained if the operation is done under the age of four years. The operation may sometimes be repeated with benefit; and the results are not always immediate, especially so far as the cessation of the fits is concerned.

Shuttleworth[18] believes that cranial operations are indicated in recent traumatic cases where epileptic or irritative symptoms arise from pressure, and also in cases of mental impairment with hemiplegia or athetosis occurring from intra-cranial hæmorrhage during parturition—the birth palsies of Gowers. Shuttleworth thinks that craniectomy may possibly do good by relieving pressure symptoms and favouring brain development where premature synostosis is the result of osseous hypertrophy from constitutional causes. In cases of mental impairment from effusion in hydrocephalus and in tubercular meningitis, **Tapping** may be resorted to with advantage. In hypertrophy of the brain **Trephining** and **Section of Dura Mater** may be beneficial by relieving undue pressure.

Telford-Smith[19] reports two cases of craniectomy in idiots, one microcephalic, the other congenital, but not microcephalic. In the first case the only gain was a cessation of head-knocking; any mental development there was being most likely attainable, Telford-Smith thinks, by educational methods alone. In the second case it was impossible to see any mental improvement or sign of brain development. Telford-Smith thinks the weight of evidence so far is against the operation of craniectomy in idiocy.

A. Broca and P. Mauriac[20] are much in favour of operative interference in hydrocephaly and microcephaly. Broca reports a successful case of **Drainage** for hydrocephaly.

Vertebral Puncture in general paralysis is the subject of two very full yet somewhat contradictory reports. Turner[21] operated on fourteen cases—seven males and seven females—in an advanced stage of the disease. He says the operation was not followed by any appreciable amelioration in the condition of the patient, either in the bodily or the mental aspects of the case. The facts obtained by noting the pressure in each case, as well as from the subsequent examination of the fluid, are directly opposed to the idea that the excess of fluid in general paralysis is pressure fluid, as well as to the view that this fluid is an inflammatory product.

On the other hand Babcock,[22] from operations on twelve cases of general paralysis, concludes that lumbar puncture affords temporary

relief from pressure symptoms in over 50 per cent., the most beneficial effects being manifest on motor inco-ordination. The fluid contains an inflammatory product (albumen) in all stages. He found that the albumen diminished in the later stages, whereas the pressure increased as the disease progressed. He thinks that the operation presents excellent diagnostic possibilities, particularly in meningeal inflammations. He found micrococcus pneumoniæ and streptococcus pyogenes in the cerebro-spinal fluid of a patient suffering from acute delirium.

Turner and Babcock agree in saying that the operation is simple and unattended with danger in most cases, and that it most certainly will relieve pressure in the cranium.

Kroemer[23] has collected some three hundred cases in which operations on the uterine appendages had been undertaken on account o neuropathic affections. Two hundred of these operations were followed by benefit to the patients, and in one hundred the result was either doubtful, indifferent, or unfavourable.

Mental amelioration in the insane during the course of certain bodily diseases is a matter of common observation among alienists, and many cases have, from time to time, been put on record. It is generally believed, nevertheless, that inflammations and pyrexiæ artificially induced have not this beneficial effect. However that may be, G. Albertotti[24] describes some experiments on **Abscess Therapy,** the results of which lend countenance to the belief in the utility of this method of treatment in the acute, and the exacerbations of the chronic, psychoses. He used the essential oil of turpentine as being aseptic, and injected hypodermically from 1 to 2 grammes, generally the latter quantity, on the outer surface of one or both thighs, or, in case of repetition, in the deltoid region of one or both arms. Abscesses formed in from five to eleven days, and during their development the temperature obtained varied in different cases from a minimum of 37° C. to a maximum of 39·7° C. Of ten recent cases of acute mania so treated, there was immediate amelioration in six, little or no change in four. Three of the cured patients—two maniacs and one melancholiac—re-entered the asylum about a year after their discharge, but one of these recovered again very speedily, and the others were much improved at the time of writing.

The author of the paper is inclined to think that the beneficial effects are due to the combined action of the fever and the suppuration, and not to either alone, and that bacteriology will in time shed some light on the subject.

Wagner and Boeck[25] have treated a number of patients by the

Fig. E.—Triplication of crura furcata; mal-formed helix and antitragus; absent lobule.

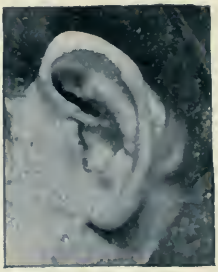

Fig. F.—Fissure in antihelix; slight Darwinian tubercle; slight antitragus.

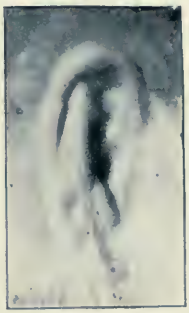

Fig. G.—Excessive length of ear; fusion and distortion of helix, antihelix, antitragus and lobule.

Fig. H.—Broad band-like helix; no antihelix; no lobule; excessive size of fossa cymbæ.

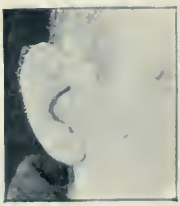

Fig. I.—Stahl ear No. 1. Elephant ear.

Injection of Tuberculin, beginning with 1 milligramme and gradually increasing the quantity. The object was to excite moderate pyrexia, the temperature not to exceed 39° C. There were several recoveries, some of them rapid, whilst other patients were more or less improved. The cases which recovered were affected with confusional mania. Recent cases, in persons from twenty-five to thirty years of age, are best fitted for treatment. Cases of general paralysis, secondary dementia, and paranoia showed little or no improvement. The use of cultures of pyocyaneus was found to be attended with inconvenience.

Thyroid Treatment in sporadic cretinism and myxœdema has been dealt with in previous "Annuals," and in that for 1896 an account was given of Bruce's earlier experiments on the same treatment in various forms of insanity, not usually or necessarily associated with visible alterations of the thyroid gland. Bruce[26] has made a further communication on this subject in which he states that of twenty-five male patients, whose ages ranged from twenty to fifty-five years, so treated, seven recovered, four of whom were between twenty and twenty-five years of age, two between thirty and forty, and one forty-three; of thirty-five female patients, ranging from twenty to sixty-five years of age, seventeen recovered, the recoveries being very equally distributed from the age of twenty to fifty years. Thirteen of these successful cases were either puerperal, lactational, or climacteric. These sixty cases do not include the thirty previously reported upon. The majority of the cases chosen for treatment were unfavourable, and all had received, without apparent benefit, the best dietetic and therapeutic treatment which the Royal Edinburgh Asylum could afford prior to the administration of thyroid tabloids. Several recoveries took place where patients threatened to pass into confirmed dementia, or had remained stuporose for long periods—in one case two years. Thyroid produces a mild feverish condition beneficial to the patient, is a direct cerebral stimulant, and probably at some periods of life supplies a substance necessary to the bodily economy.

Reinhold[27] treated twelve cases of insanity in which there was enlarged thyroid. The patients were nearly all young, and were treated for six weeks with thyroid tabloids. In every case the thyroid gland diminished in size, but it could not be said that the mental affection was at all influenced by the thyroid feeding.

Babcock[28] has treated twenty-two cases with thyroid extract. The average duration prior to treatment was fourteen months, ranging from three months in a case of cerebral exhaustion following acute delirium to five years in a case of chronic melancholia. The average period of treatment was twenty-six days. There were cases of mania

and melancholia of long duration, of cerebral exhaustion following acute insanity, of post-melancholic hebetude, and doubtful cases bordering on terminal dementia. Four recovered, five were greatly improved, three were slightly improved, three improved but relapsed, and seven showed no change. The initial dose was 5 grains of the desiccated thyroid extract, the equivalent of 31¼ grains of fresh gland, or about half a sheep's gland. The maximum dose attained was 15 grains of this desiccated extract.

The Medical Staff of the Willard State Hospital[29] tried the thyroid treatment in twenty-two cases which were not progressing towards recovery. The report was made too soon for definite conclusions, but in at least one case which had been previously most discouraging, there seemed to be a fair prospect of recovery, and others were improved. Currie[30] of the same asylum, writing six months later, states that a patient much improved by the thyroid treatment relapsed after two months, and again received treatment with a still further improvement in his mental condition, but so far had not recovered. A case of sub-acute mania very violent and troublesome before treatment, became and remained quiet, cheerful, and fairly industrious. One terminal dement became stronger and more active, and remained so for several months. The other cases were not improved to any appreciable extent. Currie, in the same paper, gives notes of seven other cases treated subsequently by himself. The melancholiacs became brighter, more cheerful, and appreciative, but three of them relapsed very soon after treatment was discontinued. Two patients remained in a favourable mental condition three months after treatment, and their recovery was probable. The others were very much improved.

In a discussion on the treatment of mental and nervous diseases by animal extracts at the meeting of the British Medical Association at Carlisle in July, 1896, Macphail[31] said that he had treated about fifty cases with thyroid tabloids, and without claiming too much for the drug he had no doubt that in certain cases it was a most valuable therapeutic agent. There was a mental change in all the cases—in some slight, in others temporary, while in a few the change was little short of marvellous. He would go the length of saying that we were not justified in considering certain cases chronic after a year or eighteen months' residence in the asylum without giving them the chance of undergoing thyroid treatment. Clouston, Urquhart, Yellowlees, and L. C. Bruce spoke to much the same effect. The latter said also that he considered thyroid of great value in cases of anergic stupor, as a diagnostic between stupor and dementia, and as a diagnostic of

curability, as he had never seen any case recover which had not shown some improvement when under thyroid treatment. On the other hand Farquharson and Carlyle Johnstone obtained unsatisfactory or negative results. A. Robertson described a case of primary dementia greatly benefited by **Myelin**, but few marked or definite results seemed to have been obtained from this substance, cerebrinin, orchitic fluid, or ovarian extract.

J. B. Herrick [32] from a review of the observation of various clinicians throughout the world on the therapeutic effects of thyroid extract concludes that it is curative in myxœdema (idiopathic, cretinism, operative). The remedy has to be continued for an indefinite time to prevent relapse in these conditions. In mental and nervous diseases it is of doubtful value, to say the least. In exophthalmic gôitre it is contra-indicated.

Telford-Smith and J. Thompson [33] have found that cretins under thyroid treatment suffer from greatly increased bending of the legs. They recommend, as preventive measures, that the patients should be kept as much as possible from walking, be given strengthening diet and medicine, as well as get plenty of sunlight and open air. Telford-Smith suggests the application of a light splint as an alternative to the prevention or great restriction of walking. He has employed thyroid in the treatment of idiots of the Mongol type procuring mental and physical improvement varying inversely as the age of the patient.

Rolleston [34] reports a typical case of *acromegaly* treated with **Pituitary Extract** with negative results. He suggests that acromegaly might be benefited by giving pituitary and thyroid extracts at the same time. The dose of the two extracts should be varied so as to get the desirable mean, but at first, perhaps, a larger quantity of the pituitary extract should be given.

The glycerine extract of **Red Bone Marrow** has been made the subject of therapeutical experiment by several American alienist physicians with encouraging results. Caroline S. Pease [35] treated seventeen anæmic patients at the St. Lawrence State Hospital, with the result that the corpuscular value of the blood was greatly increased and the mental condition of nearly one-third of the cases noticeably improved. A drachm of the glycerite of bone marrow was given three times a day for six weeks.

Langdon and Bamford [36] treated twenty melancholiacs at the Hudson River State Hospital with a 50 per cent. glycerine extract of bone marrow. Eleven of the patients were men; of these, eight gained in weight and one lost. All of the women gained in weight.

Six men improved considerably mentally, and in five the treatment seemed to have no effect on the mental symptoms. Five of the women improved mentally, but in the other four there was no mental change. Langdon and Bamford express themselves gratified with their results. They recommend the marrow not only for anæmia in the quiet forms of insanity, but in all cases showing blood dyscrasia.

C. Martinotti[37] publishes a preliminary note respecting his observations on the hypodermic use of **Camphor** in small doses as a stimulant to metabolism. He administered the drug in the dose of 2 Pravaz syringefuls of a 1 per cent. solution in sterilised oil. In the cases so treated, of which he quotes a few under treatment for a month, the digestive functions became more active, the body-weight increased, and three out of the four patients improved mentally becoming industrious, or more so than formerly.

Haig,[38] basing his treatment upon his well-known views as to the pathogenesis of various nervous disorders, recommends **Farinaceous Diet** in *epilepsy* with **Sodium Salicylate** to eliminate the uric acid, and **Potassium Iodide** to prevent it from combining with alkali when in the blood. He prohibits the use of tea, considering caffeine, theine, theobromine, and all similar xanthin compounds practically equivalent to uric acid.

Flechsig's treatment of epilepsy described in the "Medical Annual" for 1894, and Bechterew's noticed in that for 1896 have been tried by many observers with varying results. Lui,[39] having thoroughly tried the method of Flechsig in three cases, and that of Bechterew in ten, concludes that both methods are capable of yielding good results; the former is perhaps of greater efficacy in respect of the convulsive attack and of occasional psychical disturbances, whereas the second has the advantage of being much more readily tolerated by the organism.

Guicciardo[40] has employed Bechterew's fluid in four classical cases of epilepsy for six continuous months. The results lead to the conclusion that it does not cure the disease. It influences the epileptic attack by virtue of the amount of bromide which it contains; in general it is well tolerated, and can be administered for a long period without harm. It acts, and may be employed, like simple bromide for subduing the violence and the frequency of the convulsive attacks, and may be used in preference when it is necessary to take into account the cardiac vigour and the general condition of debility.

Bennecke[41] used the Flechsigian method in the treatment of fifteen patients of both sexes. Of this number only two relapsed during the bromide stage, and even these might be considered improved. He

Fig. A.—Abnormal implantation of ears; too marked conchoidal shape. The Morel ear.

Fig. B.—Blainville ears, and also excessive length of ears.

Fig. C.—Excessive length of ears; facial asymmetry.

insists on the necessity of prolonging the period in which large doses of bromide are given from two months, as originally recommended by Flechsig, to at least a year. Salzbourg[42] has obtained results equally conclusive with smaller doses both of opium and bromide than those adopted by Flechsig.

On the other hand Pollitz[43] treated seventeen patients on Flechsig's plan with unsatisfactory results. There was nothing accomplished that the bromide alone would not have done; and in one case the opium had to be withdrawn to avoid fatal consequences. He believes the preparatory opium treatment to be purposeless, and, when the large doses are reached, injurious, as evidenced by the toxic symptoms, the loss of body-weight, the increase in the number of fits, the numerous deaths. He deprecates the employment of such an energetic method in general practice. It should be said that Pollitz used the tincture of opium instead of the extract, and that the patient who all but died was suffering from post-epileptic stupor before the treatment was begun.

Contra-indications[44] to the employment of Flechsig's method, according to some of its advocates, are the status epilepticus, plethora, and the existence of focal cerebral lesions. In all cases constant supervision is required.

Böhme,[45] from his experience of the opium-bromide "cure" in ten cases of epilepsy, would not, in spite of its disadvantages, be averse to its use in selected cases. Among other remedies of more or less repute he also tried **Bromalin.** He administered it to two patients in whom bromides gave rise to the rash in a severe form. Bromalin had little or no effect on the fits, but the rash improved and the patients became less irritable, more docile, less quarrelsome. The drug was given in quantities of 8 or 9 grammes daily, 12 grammes, as formerly recommended, causing somewhat severe headache. Bromalin is sixteen times as expensive as potassium bromide.

W. Murray[46] reports two cases of epilepsy of long-standing cured by **Silver Nitrate,** the patients electing to run the risk of pigmentation.

In *insanity connected with auto-toxis* McLane Hamilton[47] finds that the most successful treatment consists in **Lavage, Intestinal Douches,** gastric and intestinal antisepsis by means of **Hydrochloric Acid, Borax, Sodium Salicylate, Charcoal, Guaiacol,** or **Naphthalin** in small and repeated doses, and the administration of a combination of the **Red Marrow** from the small bones, **Blood,** and **Glycerine.**

Most of the newer *hypnotics* and *sedatives* having already been treated of in previous issues of the "Medical Annual," we shall confine ourselves to a short note on five of this now numerous class.

Chloralose, described in the "Medical Annual" for 1894, has been employed by Haskovec,[48] of the Psychiatric Clinic at Prague, in the treatment of eighty-two patients of both sexes. In doses of 3 to 6 grains it acted as a nerve sedative; of 7½ to 15 grains, as a hypnotic. In from half an hour to an hour sleep sets in and lasts from three to seven hours, this result depending upon the dose, the nature of the disease, and the age of the patient. The doses to begin with should always be small—from 3 to 6 grains. Suitable cases are those of mania, especially in young patients, of epilepsy, and of alcoholism. Unsuitable cases are those with organic disease of the brain, and elderly patients. These are liable to slow poisonous effects, convulsions general or partial. It is best given, well sweetened and flavoured, dissolved in hot water. The dose should not exceed 15 grains.

Raimondi[49] sounds a note of warning concerning the much vaunted **Sulphate of Duboisin**, which may possibly apply to other mydriatics. He administered by injection gradually increasing doses of this drug to some dogs for a period of two months. The animals lost considerably in weight; their gait became ataxic. The medulla spinalis at the level of the last lumbar and first sacral nerve was sclerosed. In last year's "Annual," Marandon de Montyel's experiences of the toxic effects of duboisin were quoted (p. 39).

Frank[50] recommends **Benzacetin** as a sedative in doses of 8 to 15 grains in those cases where hypnotics proper do not seem advisable.

Two Russian physicians, Olderoggue and Jurman,[51] have made a series of experiments with the **Hydrobromide of Scopolamine,** and found that the drug possesses a true value as a hypnotic in the treatment of the insane. Administered hypodermically in doses varying from 0·003 to 0·015 of a grain, it induced in the majority of the subjects a sleep which lasted from three to ten hours. On awakening the patients appeared much calmer than before the administration of the drug. This effect was especially pronounced in cases of mania, but it was not so marked in those of acute lypemania. In chronic insanity its hypnotic action was also manifest. In delirium tremens, however it tended only to weaken the patient, and had no hypnotic action whatever.

Pellotin, an alkaloid discovered in anhalonium, a species of Mexican cactus described in last year's "Medical Annual," has been given by Jolly[52] to a number of patients in the neurological wards of the Charité Hospital. It was tried in twenty cases of different kinds; 2 centigrammes had no effect, but from 4 to 6 were efficacious in producing sleep. It is said that no injurious consequences of any kind were observed, but a few patients complained of giddiness and refused

to take the medicine. Jolly considers 6 centigrammes of pellotin equivalent to 1 gramme of trional or 2 grammes of hydrate of chloral.

Mairet and Vires[53] injected **Serum** taken from a patient cured of mania into two women suffering from acute mania. One of the patients, who had relapsed after a first series, was completely cured after a second series of injections in daily doses of 20 c.cm. Although the cure may have been a mere coincidence, or the result of improved nutrition brought about by the injections, yet the serum appeared to possess, in the opinion of Mairet and Vires, *hypnotic properties* sufficiently well-marked to be recorded.

REFERENCES.—[1] "State Hosp. Bull.," July, 1896; [2] "Journ. Ment. Sci.," April, 1896; [3] "Med. Press and Circ.," Aug. 26, 1896; [4] "Brit. Med. Journ.," Jan. 18, 1896; [5] "Ann. méd.-psych.," May—June, 1896; [6] "Dublin Med. Journ.," Feb., 1896; [7] "Journ. Ment. Sci.," April, 1896; [8] "Ann. méd.-psych.," May—June, 1896; [9] Ibid., May—June, 1896; [10] "Brit. Med. Journ.," Sept. 26, 1896; [11] Ibid., Sept. 26, 1896; [12] "Liverpool Med. Chi. Journ.," July, 1895; [13] "Journ. of the Sanit. Inst.," part 4., vol xv.; [14] "Amer. Med. and Surg. Bull.," Jan. 11, 1896; [15] Ibid., Jan. 11, 1896; [16] "Journ. Ment. Sci.," April, 1896; [17] "Amer. Journ. of Med. Sci.," Jan., 1896; [18] "Journ. Ment. Sci.," Jan., 1896; [19] Ibid., Jan., 1896; [20] "Brain," Spring, 1896; [21] "Brit. Med. Journ.," May 2, 1896; [22] "State Hosp. Bull.," July, 1896; [23] "Journ. Ment. Sci.," April, 1896; [24] "Ann. di Freniat.," Fasc. 1 and 2, 1896; [25] "Journ. Ment. Sci.," April, 1896; [26] Ibid., April, 1896; [27] "Brit. Med. Journ.," Epitome, Feb. 15, 1896; [28] "State Hosp. Bull.," April, 1896; [29] Ibid., Jan., 1896; [30] Ibid., July, 1896; [31] "Brit. Med. Journ.," Sept. 26, 1896; [32] Ibid., Epitome, Sept. 26, 1896; [33] "Brit. Med. Journ.," Sept. 12, 1896; [34] "Lancet," April 25, 1896; [35] "State Hosp. Bull.," April, 1896; [36] Ibid., April, 1896; [37] "Ann. di Freniat.," Fasc. 3, 1896; [38] "Brain," Spring, 1896; [39] "Journ. Ment. Sci.," April, 1896; [40] Ibid., April, 1896; [41] "Ann. méd.-psych.," March—April, 1896; [42] Ibid., March—April, 1896; [43] "Allg. Zeitschr. f. Psychiat.," Heft 2, 1896; [44] "Journ. Ment. Sci.," April, 1896; [45] "Allg. Zeitschr. f. Psychiat.," Heft 2, 1896; [46] "Lancet," Sept. 21, 1895; [47] Ibid., May 16, 1896; [48] "Journ. Ment. Sci.," April, 1896; [49] "Ann. di Freniat.," Fasc. 2, 1896; [50] "Journ. Ment. Sci.," April, 1896; [51] "New York Med. Journ.," March 14, 1896; [52] "Lancet," June 20, 1896; [53] "Brit. Med. Journ.," Epitome, Oct. 24, 1896.

INSECT BITES.

P. G. Unna, M.D., Hamburg.
Norman Walker, M.D., Edinburgh.

The "Lyon médical" (for September 27th, 1896) publishes the following formula:—

Ammonia Water	gtt. 40	Salicylic Acid	grns. 4½
Collodion	grns. 76		

A few drops of this mixture are to be applied to the bites.

Another prescription is :—

Collodion	℥iijss	Salicylic Acid Benzoin	āā gr. 15

REFERENCE—"New York Med. Journ.," Oct. 26, 1895.

INSOMNIA. *Græme M. Hammond, M.D., New York.*

Dr. S. Eccles[1] highly recommends the **Warm Bath** for the purpose of overcoming insomnia. The bath should be administered in a room, the temperature of which is between 65° F. and 70° F. The head and face of the patient should be rapidly douched with water at a temperature of 100° F., the patient's body in the meanwhile being uncovered.

The cooling of the body by the air while the hot water is applied to the head, sends the blood to the head. The entire body, except the head, should then be immersed in a bath at 98° F., which should be rapidly raised to 105° or even to 110°. In a few minutes the patient should be removed, wrapped in warm blankets and carried to his bed. A warm bottle is placed at his feet, and possibly some warm liquid food administered.

Kuriden[2] details his experience with the **Sulphate of Duboisinine.** The remedy was used subcutaneously in doses ranging from $\frac{1}{130}$ to $\frac{1}{65}$ of a grain. In three hundred and sixty cases sleep lasting for six hours occurred in one hundred and fifty three instances; from four to six hours in one hundred and twenty-six cases; less than four hours in sixty-two cases, and in nineteen cases the drug was a failure. The remedy acted most favourably in the insomnia of epilepsy, the periodical psychoses, and mania, while it was not found serviceable in sleeplessness depending upon delirium and organic diseases of the brain.

A writer in the "Gazette hebdomadaire de médecine et de chirurgie"[3] advises, in cases in which insomnia is due only to simple over-excitement of the encephalic cells, the following rules and prescriptions : All prolonged literary work at night, remaining in very hot rooms for any length of time, and a too abundant and too exciting diet should be avoided. A capsule, containing 15 grains of **Sulphonal**, or one containing 12 grains of **Trional** combined with 4 grains of **Sodium Bicarbonate,** may be taken in the evening just before eating. Persons who cannot swallow capsules may take the sulphonal pure or in sugar, flavoured with vanilla, just before bedtime, but it must be immediately followed by a hot infusion of linden flowers or of orange leaves. When sulphonal and trional fail, the following preparations of **Potassium Bromide** may be tried :—

℞ Potassium Bromide grs. 150 | Distilled Water ozs. 3·75

A dessertspoonful of this is to be taken in sweetened water or in a

hot infusion of orange leaves. If the insomnia persists, the dose may be repeated in an hour.

℞ Potassium Bromide	grs. 75	Syrup of Bitter	
Syrup of Aconite	grs. 600	Orange Skin	grs. 900

A dessertspoonful of this syrup is to be taken in a quarter of a glass of pure water or in a hot infusion.

Bromide may be associated with chloral hydrate, if there is no cardiac trouble, in the following manner :—

℞ Potassium Bromide	grs. 60	Syrup of Rasp-	
Chloral Hydrate	grs. 45	berries	ozs. 3

A dessertspoonful of this syrup may be taken in half a glass of pure water. If the insomnia persists the dose may be repeated in an hour. Preparations of **Opium** rarely succeed in this affection, but it may be tried combined with **Hyoscyamus** as follows :—

℞ Extract of Opium	gr. 0·4	Powdered Licorice	q.s.
Extract of Hyoscyamus	gr. 0·3		

One such pill is to be taken about three hours after the last meal.

REFERENCES.—[1] "Indian Med. Chir. Rev.," March, 1896 ; [2] "Amer. Journ. Med. Sci.," Feb., 1896 ; [3] "Med. Record," Feb. 18, 1896.

INTESTINAL SURGERY. *A. W. Mayo Robson, F.R.C.S.*

In the "Annals of Surgery" (March, 1896) is an account of a series of enterectomies in which I had employed my decalcified bobbin with success, but as the method was described in last year's "Annual," it is unnecessary to consider it further now, though I have operated on other cases since in the same manner with equally satisfactory results, and the method has been employed by Mr. Jessett,[1] Mr. Lawford Knaggs, and other surgeons.

Dr. Leonard Rogers[2] advocates simple suture in enterectomy, and writes as follows : The suggestion of Mr. Greig Smith, "in his paper entitled, Is the Apposition of Peritoneum to Peritoneum a Surgical Error? in the "British Medical Journal" (1895, vol. i, p. 1)," that the principle of sero-fibrous union might possibly be applied to the operation of enterectomy, seemed to me of especial importance to those working abroad, who are very unlikely to have at hand such appliances as Senn's plates, Murphy's buttons, or Mayo Robson's bobbins. I consequently devised the following method in January, 1895, but now (November, 1895) I have been able to prove its practicability. The method consists in turning back the peritoneal coat off one end of the small intestine, after resecting a portion of the gut, suturing the muscular coat thus exposed to the peritoneal coat of the other end of the intestine, subsequently turning down the reflected portion of peritoneum over the first row of sutures, which are thus completely

buried, and suturing its deep fibrous surface to the outer serous surface of the unreflected end of the intestine. Thus a double sero-fibrous union is obtained which will unite both quickly and firmly. The inner sutures are passed through the muscular coat of one end and the mus-

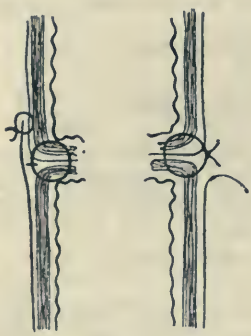

Fig. 26.

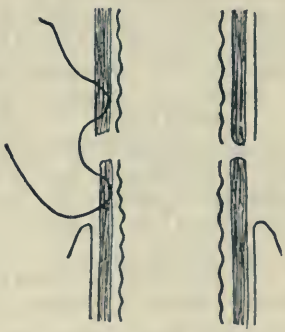

Fig. 27.

cular and peritoneal coats of the other end of the bowel, which afford ample material for holding, whilst the outer sutures include the peritoneal coats only. The accompanying diagrams (*Figs.* 26, 27) show the method of passing the sutures, and the parts brought into apposition. The inner wavy lines represent the mucous membrane, the thick lines the muscular, and the thin straight lines the peritoneal coats of the small intestine. *Fig.* 26 represents on the left hand side the peritoneal coat turned back from one end of the bowel, and on the right the method of passing the inner suture. *Fig.* 27 shows on the left side the parts brought into apposition on tightening of the inner suture, and on the right side the second suture is also shown in position, completing the junction.

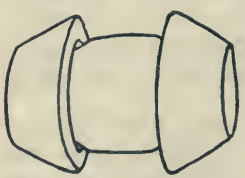

Fig. 28.—Outline sketch of the bobbin (natural size).

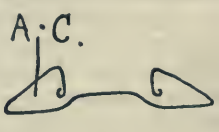

Fig. 29.—Longitudinal section of the bobbin, the intestine (N), and india-rubber rings (R and R') shown in section below.

Another suggestion is brought forward by Dr. J. Jackson Clarke [3] for intestinal anastomosis. He says: In the instrument which I have devised the pressure is made by india-rubber

rings, the edges of which are rounded off. In *Fig.* 28 is shown the size of the instrument as designed for small intestine; for large intestine an additional quarter of an inch in diameter could be obtained. *Fig.* 29 represents the bobbin as seen in section. The chamber AC could be used to contain some mild antiseptic. In the lower part of *Fig.* 29 the rubber rings are shown with the bowel *in situ*. Both have the same diameter as the smaller part of the bobbin—*i.e.*, half an inch. They are cut so that when stretched to the diameter of the barrel of the empty bobbin their depth just brings them flush with the lips of the larger end of the bobbin. The mesial edges, both inner and outer, of the rubber bands are slightly rounded off. One band (R) is half as wide as the barrel, and the other (R′) is cut obliquely so that at its outer edge it is $\frac{1}{32}$ in. wider than half the length of the barrel. The mode of making the anastomosis is shown in *Fig.* 30. One of the rubber rings is lubricated with oil or soap and is inserted into one end of the gut, and then a purse-string stitch is run close to the border of the intestine and securely tied over the narrow neck of the barrel. The other end of the gut is treated in the same way, then the rings are easily pushed (by the fingers of the operator pressing through the gut) over the ends of the bobbin on to the barrel, and thus a secure anastomosis is effected. The redundant part of the mesentery may be drawn into two triangular folds, one on each side of the bowel, and fixed, as shown in *Fig.* 31.

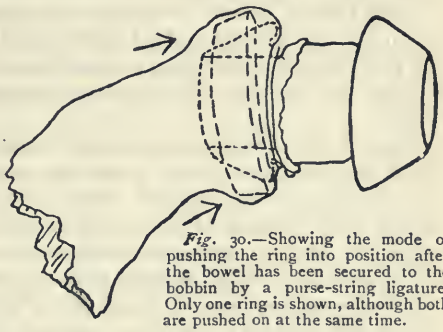

Fig. 30.—Showing the mode of pushing the ring into position after the bowel has been secured to the bobbin by a purse-string ligature. Only one ring is shown, although both are pushed on at the same time.

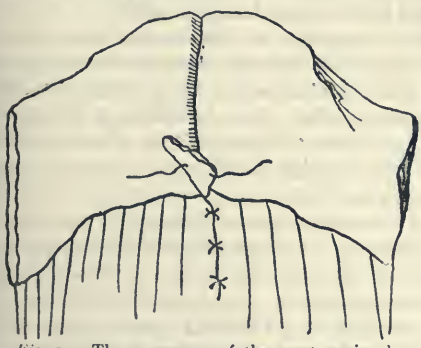

Fig. 31.—The appearance of the anastomosis when completed.

In the "British Medical Journal" (October, 1896) Mr. Mitchell

Banks gives his very favourable experience of the use of the Murphy button on enterectomy in a paper which is full of interest.

Colotomy in Colitis.—Several years ago I suggested at the London Clinical Society the performance of colotomy in ulcerative and in membranous colitis in order to get at and wash out the affected bowel. I illustrated my remarks by a case on which I had operated.

At the Clinical Society (December 1895), a similar case was recorded by Dr. Hale White and J. W. Golding Bird in which right colotomy was performed and the bowel washed through from colotomy opening to anus with success; the colotomy opening was closed after five weeks.

Cancer of the Colon associated with Membranous Colitis.—Dr. Pye-Smith reported the case of a woman, aged fifty-nine, who suffered from stricture of the sigmoid flexure, and who was in the habit of passing large masses of casts, tubular and shreddy, some eighteen inches in length; the casts chemically and histologically were mucinous, with a certain number of leucocytes. After death the casts were found to have been produced below the malignant stricture; the mucosa was normal; the casts were not fibrinous (as Dr. Bristowe had pointed out, such were at times encountered in cases of pneumonia), nor were they sloughs.

Imperforate Anus causing intestinal obstruction at the age of thirty-five.—In April, 1896, I was called on to operate on this extraordinary case. I found that the woman had been constantly passing liquid fæces through a small vaginal fistula, there being no anus.

After cutting through the perinæum at the normal anal site, I reached the rectum at the depth of an inch and a half and was able to bring it to the surface, and after a prolonged course of lavage to bring away large quantities of fæcal material. Dr. Albanese, of Palermo, reports a similar case in "La Clinica Chirurgica," in a young man of twenty-one, though in this instance there was a minute anal aperture artificially made soon after birth.

Mr. Butler Smythe[4] had a successful case of laparotomy for complete intestinal obstruction following an attack of peritonitis, where on opening the abdomen the several forms of obstruction were found and are enumerated in the order they appeared: (1,) Intestine adherent to the abdominal wall; (2,) Volvulus; (3,) Omental band constricting the transverse colon; (4,) Peritoneal band binding back the descending colon; (5,) Impaction of fæcal matter. These were all relieved; abdomen closed; recovery complete.

Dr. Charles McBurney[5] discusses a case of sarcoma with intussusception of the small intestine in a woman, aged forty years, where six

or seven inches of intestine were resected, including the tumour and intussusception, a Murphy's button being used—the tumour found to be on examination myxo-sarcoma.

At the discussion which followed, Dr. Meyer believed that most new growths within the intestine were likely to cause intussusception, and consequently when the latter condition was found, one *should always examine for malignant tumour.*

Chronic Dilatation of Colon.—Mr. Rolleston and Mr. Howard[6] report the case of a boy, aged twelve, who was constipated since six months of age. He was emaciated, had sunken eyes and sallow complexion. The abdomen was enormously distended, and peristaltic contraction was easily seen. From time to time the bowels acted freely, the abdomen becoming soft; then suddenly vomiting and constipation would come on without cause. Patient died. At *post mortem* there was great dilatation of colon, but no stricture or other cause found. There were numerous ulcers in the colon due to distension, and the muscular coats were much hypertrophied.

Cœliotomy for Volvulus of the Sigmoid in a Man aged Eighty-five Years; Intestinal Drainage; Recovery.—J. Greig Smith and Charles E. S. Fleming[7] report the case of a man, aged eighty-five years, who presented the usual symptoms of volvulus. There had been complete obstruction for a week. After making an incision an enormously distended sigmoid could be detected by the fingers. A fold was pinched up and brought through the wound and incised, when enormous quantities of gas escaped. The gut was found to have made one complete twist, perhaps a little more. After reducing the twist, as the abdomen remained greatly distended, it was decided to fix and drain the bowel. This was accomplished by thrusting a piece of rubber-tubing of the diameter of a crow-quill through the incision made to relieve the distension, by stretching over a probe. It was retained by passing a safety pin through the serous and muscular walls of the bowel and through the wall of the tube. Secondary sutures were introduced. On the third day the abdomen was nearly flat and the tube was removed. The wound in the bowel was closed by Dupuytren's suture, and the parietal wound closed. The patient did well from this time on, excepting an attack of pain and collapse on the eighth day.

Mr. Smith says: "Intestinal drainage as an accessory is scarcely inferior to removal of the cause of the obstruction in many cases as a means of getting the patient well. Properly managed, it can scarcely do harm and adds nothing to the operative risk, while its benefits in the reduction of mortality are very conspicuous." His experience now covers one hundred cases.

Intestine constricted by Vermiform Appendix.—Dr. Dwight H. Murray[8] records a rare case of intestinal obstruction caused by the vermiform appendix being wound around a loop of the ileum, over and under, the end of the appendix having passed upward from the back side of the mass between the ileum and the caput coli. The end of the appendix was enlarged and slightly adherent to the ileum by newly-formed adhesions. *Figs.* 32 and 34 show, respectively, the front and back views of the obstruction previous to operation. The constriction was very tight, producing complete obstruction to the gut. It was with difficulty that the appendix could be pulled away from the ileum so that the constricted loop of the intestine could be drawn through the knot that had been tied. When this was done, however, the appendix lay free in the abdominal cavity, the end of it being clubbed, then a narrow portion under the enlargement, and the remainder being of normal size, as shown by *Figs.* 33 and 35. The appendix was two

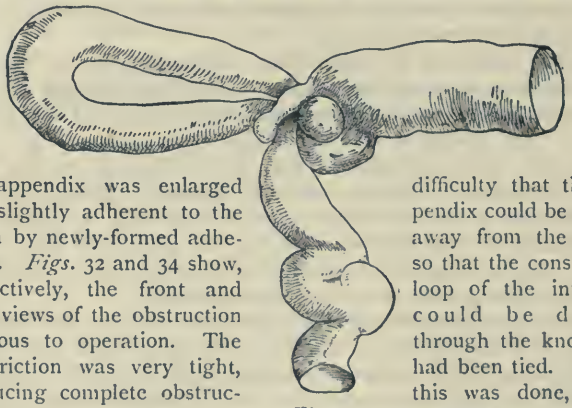

Fig. 32.

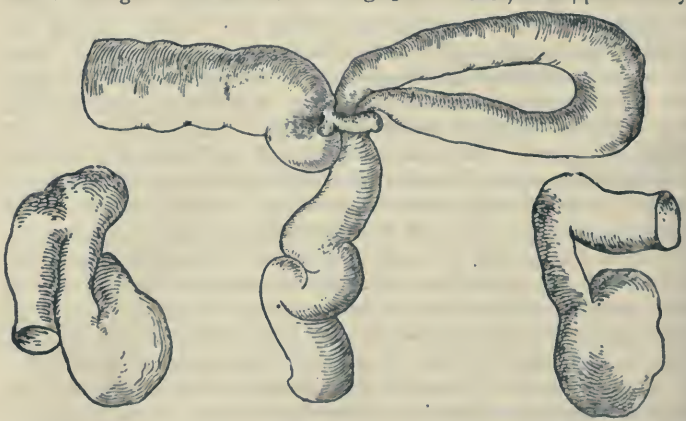

Fig. 33. *Fig.* 34. *Fig.* 35.

inches in length, and was removed at a point one-half inch from the caput coli.

The boy made a good recovery, and was discharged from the hospital in three weeks perfectly well.

Dr. Murray concludes from this case that cessation of pain and stercoraceous vomiting, the constipation being unrelieved, is neither a reason for delay nor renders an operation less urgent. The operation in this case was delayed twenty-six hours on account of the stopping of vomiting, pain, and the apparent absence of tumour.

REFERENCES.—[1] "Lancet," Oct. 31, 1896; [2] "Brit. Med. Journ.," April, 1896; [3] "Lancet," Aug. 9, 1896; [4] Ibid., June 13, 1896; [5] "Annals of Surgery," April, 1896; [6] "Brit. Med. Journ.," May 30, 1896; [7] "Amer. Journ. Med. Sci.," Jan., 1896, "Brit. Med. Journ.," 1895, No. 1803; [8] "Medical Reprints," Sept. 15, 1896.

INTUSSUSCEPTION (Infantile).

Henry Dwight Chapin, M.D., New York.

Dr. F. H. Wiggin[1] reports one hundred and three cases of intussusception treated by inflation and laparotomy.

If it is desired to treat a case of infantile intussusception by means of intestinal distension (which the writer freely admits, after a careful study of this subject, notwithstanding the fact that the only case which has come under his personal observation was successfully treated by enemata, he would be unwilling to employ), at least one and one half pints of tepid saline solution (one teaspoonful of salt to the quart) should be placed in a reservoir, which is not to be elevated above three feet; and if this is not successful after one trial, the method should be abandoned, and other means to effect a reduction employed. If it is thought that reduction has occurred under this method, as evidenced by the apparent disappearance of the tumour, the infant should be placed in its crib, and quieted by other means than by opiates or motion, to the end that if reduction has not really been effected, the fact may be made manifest by the symptoms at the earliest possible moment, so that other treatment may be attempted while the chances of a successful outcome, though diminished, are not absolutely gone. It is well to recall the fact that in those cases which were successfully treated by enemata the average hour after the onset at which treatment was begun was the forty-first, and in those cases which terminated fatally it was the sixty-ninth.

The history of the treatment of infantile intussusception by the method of intestinal distension, by either air or water, is certainly a dark page in that of our science.

Larparotomy was performed in this group of cases sixty-four times.

It resulted successfully in twenty-one, or in 32·8 per cent. The average age of these infants was about six and one-half months. The average hour from the onset till the time of operation was the forty-fourth. In seventeen of the cases inflation and enemata, or both, had previously been tried without success. In eight cases the invaginated bowel was readily reduced, and in ten cases it was reduced with difficulty. In three of the histories nothing was stated regarding this point. The length of time required for the performance of the operation was in one instance stated to be eight minutes, and in another thirty-five minutes, which latter included the administration of an enema. Death followed in forty-three of the cases, giving a mortality of 67·2 per cent.

REFERENCE.—[1] "Med. Record," No. 3, 1896.

IRITIS. *G. E. de Schweinitz, M.D.,* *Clarence A. Veasey, M.D.,* } *Philadelphia.*

The following conclusions reached by Sydney Stephenson,[1] in a paper discussing the excretory origin of certain forms of *iritis* and *cyclitis*, are of interest :—

(1,) Most inflammatory affections of the iris and ciliary body are the outcome of constitutional ailments, which are in turn due to microbic infection.

(2,) In certain forms of irido-cyclitis, specific micro-organisms have been found in the contents of the anterior chamber.

(3,) There exists good grounds for believing the proximate cause of all the cases of endogenous irido-cyclitis to be the excretion by the ciliary body of micro-organisms or their products.

(4,) Therefore, bacteriological examination of the aqueous humour might furnish a ready means of detecting an organism in those maladies thought to be of infectious nature, such as rheumatism. It might lead to a correct conclusion as to the cause of doubtful cases of irido-cyclitis.

In contrast to these are the experiments of Ahlstroem.[2] In two cases of *rheumatic iritis* in which iridectomies were required, the excised portions of iris tissue were introduced, under antiseptic precautions, into the anterior chambers of a rabbit. In each eye a typical rheumatic iritis was produced. By employing the aqueous humour of these he was able to produce in other rabbits, a similar iritis. In neither of the primarily infected eyes were micro-organisms discovered. As a control experiment, upon five different occasions, pieces of iritis excised during the extraction of idiopathic and traumatic cataracts were introduced in as many anterior chambers of rabbits' eyes without any reaction whatever. His conclusion is that

rheumatic iritis is not due to a micro-organism, but to some noxious element in the blood which is capable of producing in the blood-vessels of the eye, but especially of the uveal tract, certain changes which give rise to the various symptoms by which the affection is known.

TREATMENT.—In the treatment of iritis, Juler[3] emphasizes the importance of employing both local and general rest. It is not sufficient to place the inflamed iris at rest by instilling atropia, but the whole body should be placed in the condition of least activity.

For the *pain of iritis*, especially that coming on at night, personal experience has proven the great value of **Hyoscine Hydrobromate** administered in a dose of $\frac{1}{100}$ grain at bedtime. Excellent results have also been obtained from the use of a combination of **Phenacetin** and **Salicylate of Sodium,** administered every three or four hours during the day. But the quickest and most marked results have been obtained from subconjunctival injections of a solution of **Sodium Chloride.** (See "Sub-conjunctival Injections," p. 43.) These injections have also proved of great benefit in clearing up the inflammatory process.

As a large percentage of the cases of iritis are of syphilitic origin, and necessarily demand anti-syphilitic treatment, the following conclusions of M. Chibret[4] concerning the value of **Mercury** and **Iodide of Potassium** in the treatment of ophthalmic syphilis, show this author's disbelief in the specific value of the latter drug :—

(1,) In ophthalmic syphilis mercury alone is always effective; iodide of potash alone never is.

(2,) In general syphilis mercury alone acts almost always in all cases; iodide of potash alone on almost none.

(3,) In all cases of syphilis, mercury alone is the touchstone to guide one in one's diagnosis.

(4,) Mercury, the specific for syphilis, is at the same time poison to the whole organism, and especially the nervous system.

(5,) Iodide in syphilis is often indicated to counteract the invidious effects of the mercury.

(6,) Iodide acts on lymphatic glands and rheumatism.

(7,) Severe syphilis is only affected by mercury or mercury in combination with iodide of potash. Iodide has not the local action that mercury has, but aids the patient to withstand the mercury treatment. The only thing to fear in the combined treatment is diarrhœa; when this appears, stop treatment to continue it later in smaller doses. Iodine is only useful in those cases where a saturation of mercury is necessary. In other cases it is useless, even harmful, for it diminishes the therapeutic action of the mercury.

Attention has been directed to a new mydriatic, **Mydrin**, by Cattaneo,[5] who asserts that it acts more quietly than those hitherto employed, that it has no effect on the accommodation, that it gives rise to little or no irritation, and has only a short action. It is a white powder, easily soluble in water, and is a mixture of ephedrin and homatropin in the proportion of 100 to 1. Mydriasis is said to begin in eight seconds after an instillation, and to reach its maximum in thirty seconds (which it maintains for half an hour), and ceases in from four to six hours. A 10 per cent. solution is recommended by the author of the paper, and in his opinion it is the ideal mydriatic for diagnostic purposes.

REFERENCES.—[1] "Lancet," Feb. 29, 1896; [2] "Beit. z. Augenheil.," Heft xxi. (quoted from "Philadelphia Polyclinic," Jan. 25, 1896); [3] "Lancet," Dec. 7, 1895; [4] "North Amer. Practitioner" (quoted from "Indian Lancet," Feb. 1, 1896); [5] "La Clin. Moderna," June, 1896.

JOINTS (Diseases of). *Priestley Leech, M.D., F.R.C.S.*

Non-suppurative Ankylosis.—An interesting discussion on non-suppurative ankylosis of joints took place at the Pathological Society of London.[1] Mr. Wm. Anderson, as a tentative classification, divided the non-suppurative ankyloses into two groups, viz., inflammatory and degenerative. No distinction was made between fibrous and bony anchylosis.

(1,) *Inflammatory* might arise from (*a*,) Mechanical injury; (*b*,) Toxic elements conveyed by the blood, as in septicæmia, gonorrheal rheumatism, gout, quiet tuberculosis, and possibly in syphilis; (*c*,) Affections of the nervous system, as in surgical injuries, *e.g.*, division of nerves; disease, as Charcot's, rheumatoid arthritis, peripheral neuritis, and obscure neurosis.

(2,) *Degenerative*, (*a*,) Ossification of ligaments in rheumatoid arthritis, and perhaps in other conditions; (*b*,) Forcible and long continued pressure of one articular surface against another, as in porters who carry heavy weights upon the head, and in extreme cases of lateral curvature; (*c*,) Adaptive changes in ligaments around a joint that had undergone bony immobilization.

A third section must be reserved for obscure cases that could not be classified with certainty.

Tuberculosis.—Surgical tuberculosis is a very frequent disease, and occurs oftener than is generally supposed. Kocher states that 90 per cent. of the bone and joint cases in his clinique are tuberculous; and Tizzoni, in Italy, found that in forty-seven persons who had met with a violent death, in forty-three tubercle bacilli were present in the lymphatic glands.

König[2] reviews his experience of six hundred and fifteen cases of joint tuberculosis: 27 per cent. were treated conservatively, and injections of **Carbolic Acid** gave him better results than iodoform injections; in over 20 per cent. of the conservative cases moveable joints were obtained. In 24 per cent., mainly children, arthrectomy was performed, with 79 per cent. of cures; a large percentage of the cured cases had arrest in growth. In almost 47 per cent. of the cases resection was done, with 68 per cent. of cures. In ninety-one cases amputation was performed. If there be no hope of obtaining a moveable joint, König considers amputation justifiable. Most English surgeons would, however, disagree with this opinion.

The question of juxta-articular tuberculosis has been raised by Ménard,[3] and also by N. C. MacNamara.[4] The former author publishes a group of cases of tuberculosis affecting the epiphyses of a long bone without involving the adjacent cartilage, but extending directly to the surface of the limb. In such cases he advises immediate exposure and removal of the tuberculous deposit, to prevent extension of the disease to the joint. This danger is especially active in tuberculous disease of the lower end of the femur and upper end of the tibia. The danger of juxta-articular tuberculosis spreading to the joint depends to a great extent on the anatomical arrangement of the parts. As the synovial membrane of the hip joint surrounds the neck of the femur, tuberculosis of this portion of the bone as a rule rapidly extends to the articular cavity. In the case of the lower end of the radius and ulna the wrist joint is seldom involved, as the disease extends to the superficial posterior surface of the affected long bone more readily than it does to the joint. Radio-carpal tuberculosis, it is held, is more frequently due to primary disease of the carpal bones.

MacNamara, in the Bradshaw Lecture for 1895, advocates the same treatment for tuberculous osteitis as for infective osteo-myelitis, or osteitis of the long bones. He says that from a study of the biological relation of the marrow contained in the ends of the long bones from its physiological functions, and from the teachings of pathology we are led to believe, as a rule, that chronic or scrofulous diseases of joints are due to tuberculosis commencing within the cancellous tissue of the bones. Without question such disease may and does, begin at times in the deep layers of the articular cartilages; it may commence in the synovial or other soft structures surrounding a joint, but in children we have no evidence to prove that such is the case, but rather the reverse. The question is, Can we fix on the site occupied by the tubercle bacillus in the early stages of joint disease? In cases of this kind there is always some tenderness over the whole

of the joint, but if pressure is made with the tips of the fingers and thumb over the bones entering into the formation of the articulation, we come upon spots which are not only tender, but which on pressure cause the child to cry out with pain. These painful spots are permanent: if we examined them to-morrow, or a week hence, there they are; and they indicate definite areas of tuberculous osteitis—the commencement of the disease—which at any moment may extend to the synovial or other tissues of the joint. In the hip, in its early stage, there is, doubtless, difficulty in ascertaining the precise position of tender areas of bone such as those referred to, but it most frequently begins in the neck of the femur.

He suggests that in the early stage the tender spots in the bones should be exposed, and a trephine of about an inch in circumference used, so as to remove one or more small columns from the bones near the affected joint. After the operation the limb should be securely fixed to a splint, so that the dressings can be removed without disturbing the part; extension must be employed at the same time, and kept up for six weeks or so. After another ten days the patient should be placed under an anæsthetic, and complete flexion and extension of the joint made. From that time gentle passive motion of the joint and massage should be employed daily, and the child, if possible, removed to the country, and allowed to walk about, taking at first only gentle exercise, the amount and kind being guided by the freedom, or otherwise, which the patient experiences from pain. From considerable experience in the use of the trephine in the early stages of tuberculous osteitis, MacNamara says that it is possible in not a few cases to cut short disease of the knee and other joints, and so prevent it spreading to accessory tissues entering into the formation of the affected articulation.

Treatment of this kind may, without question, be carried through without running any risk which may not be safely undertaken if the alternative is either caries of the affected bones, or rest for long months in bed.

Drainage for Effusion.—Halley[5] advises the drainage of joints in non-purulent effusion, and injection with **Carbolic Acid** or other antiseptic, and drainage.

The following points are of the greatest importance: (1,) Absolute asepsis; if any doubt exist about this the operation should not be attempted; (2,) The joint should be entered from its most relaxed portion, or a portion that can be made to pouch; this avoids the wounding of any synovial fringes or cartilages, with subsequent bleeding, which will only add to the trouble already present; (3,) The

fluid which is injected should be one that is thoroughly antiseptic, and one which also has stimulating properties; (4,) The joint should be kept immobilized for two weeks, or longer if the drainage still continue; (5,) No relaxation of the antisepsis should be thought of until the wound has healed; (6,) Fixation of the joint, and rest of the patient in bed, may be insisted on until the wound has healed, and the joint only gradually be brought into use, and used with care for some time, but without bandaging.

Floating Bodies.—Halstead[6] has written a review of the modern views as to the ætiology and pathology of the floating bodies in joints, or 'joint-mice,' as the Germans call them. He gives the clinical histories of those cases that have been under his own care.

Volkmann classified these loose bodies into two groups: (I,) Those that occur in otherwise healthy joints; (II,) Those that are found in diseased joints:—

I.—Loose bodies occurring in healthy joints may be again divided into: (*a*,) Those of pure traumatic origin; (*b*,) Loose bodies composed of separated pieces of cartilage or bone which were not broken off at the time of injury, but become detached later; (*c*,) Loose bodies originating from hæmorrhage into a sound joint as the result of a traumatism; (*d*,) Loose bodies caused by drawing into the joint of a foreign body embedded in the capsule, *e.g.*, a piece of needle or a bullet.

The loose bodies coming under the heading (*a*,) of pure traumatic origin are very rare. Halstead only found three cases, one of which is doubtful.

II.—Loose bodies occurring in diseased joints.

(*a*,) The most frequent of these are the so-called corpora oryzoidea, which are found in tubercular hydrops articuli and so-called hydrops fibrinosis of Volkmann and Ranke. These sometimes follow trauma, but not usually. They are found in large numbers, and originate in one of three ways: (1,) As pure concretions; (2,) By desquamated epithelium forming nuclei, upon which is deposited several layers of fibrin; (3,) Sometimes they are simply detached villi, which enlarge by accumulation of successive layers of fibrin, or by swelling, and by degenerative changes taking place. As a rule they do not produce the common symptoms of loose bodies in the joint, partly because of their size, and partly for the reason that the underlying pathological condition produces symptoms that obscure those occasioned by loose bodies.

(*b*,) Bodies that originate from cartilaginous metamorphosis of the synovial membrane, or of the fibrous layer of the capsule, which are

subsequently drawn into the joint, and remain either attached by a pedicle, or become detached, forming free bodies. This is a relatively frequent cause of loose bodies in the joint. As a rule they are attached to the capsule, but are sometimes found free.

(*c*,) Loose bodies resulting from pathological changes occurring in normal joint villi with subsequent detachment of these villi. A proliferation of cartilage cells takes place at the swollen ends of the villi, or they become calcified and detached. Fischer says that those bodies that are composed of hyaline cartilage, with or without calcification, and that have no fibrous capsule nor remnants of a pedicle, are formed in this way. They are usually multiple, and are, as a rule, reniform in shape, and very elastic.

(*d*,) Loose bodies that occur in arthritis deformans. These are not common, and are usually composed of bone, being more or less covered with cartilage, and of irregular shape and uneven surface.

The question of the growth of these free bodies in joints is of some interest. It is generally conceded that they grow, but the exact way in which they grow is not clearly understood. Virchow thinks they may grow in two ways: (1,) By deposition of successive layers of fibrin; (2,) By proliferation of cartilage or bone cells that are originally present in the body, the nourishment being supplied by the synovia.

Symptoms.—The most pronounced symptom is the sudden onset of severe pain in the joint, with locking of the joint, usually in a nearly extended position, this being followed by acute inflammatory process in the joint involved. In moveable bodies in the knee, lengthening of the femur may occur as a result of irritation produced by the pressure of these bodies.

TREATMENT.—Removal by direct incision, preferably under cocaine anæsthesia, as soon as a diagnosis is made.

Inflammation of Semilunar Cartilages.—Injuries to the knee joint are often very obscure, and it often becomes a matter of difficulty to say which structure is injured.

M. Roux[7] describes a chronic traumatic inflammation of the semilunar cartilages, which consists of a circumscribed thickening of the interarticular cartilage. It may be recognized by its causes, which are, very rarely a contusion, sometimes a twist or similar injury, but most frequently it is a true squeezing of the cartilage.

This squeezing occurs in: (1,) Hyperextension of the knee, without either of the crucial ligaments having necessarily suffered; (2,) In rotation of the body, with the leg extended, the point of the foot serving as a pivot is arrested; (3,) At the beginning of the movement of extension from extreme flexion, as in recovering from the crouching

position; (4,) In sudden rotation of the knee inwards, *e.g.*, the knee being flexed at 90°. In 90 per cent. of the cases it is the internal semilunar cartilage which suffers; it becomes thickened, and the mischief afterwards travels to the capsule under the form of proliferating synovitis. There is a painful thickening midway between the internal lateral ligament and the edge of the patellar tendon. Rest and immobilization, Roux. says, have no effect on this lesion, and he recommends **Massage,** not only over the cartilage, but also massage of the quadriceps, which, in long-standing cases, is atrophied.

REFERENCES.—[1] "Lancet," vol. i, 1896, p. 482; [2] "Wien. klin. Rundschau," 1895, p. 568; [3] "Rev. d'orthop.," No. 5, 1895, quoted in "Brit. Med. Journ.," Epitome, Oct. 26, 1895; [4] Bradshaw Lecture, "Brit. Med. Journ.," Dec., 1895; [5] "Internat. Journ. Surg.," viii, No. 10, p. 302, quoted in "Amer. Med. and Surg. Bulletin," Nov. 15, 1895; [6] "Annals of Surgery," Sept., 1895; see also "Aerztliche Sachverstandiger Zeitung," Feb., 1896; also a Clinical Lecture by Sir William MacCormac in "Clin. Journ.," July 29, 1896; also "Brit. Med. Journ.," Feb. 1, 1896; [7] "Gaz. des hôp.," No. 125, 1895, quoted in "Quart. Med. Journ.," Jan., 1896.

KELOID (Treatment of). *Priestley Leech, M.D., F.R.C.S.*

While a keloid is growing, Keen[1] says no attempt should be made to remove it with the knife; repeated **Scarification** or multiple **Electrolytic Punctures** sometimes succeed in destroying it.

REFERENCE—[1] "Med. Record," Nov. 9, 1895.

KIDNEY (Diseases of). *E. Hurry Fenwick, F.R.C.S.*

The Early Diagnosis of Tuberculous Kidney.—Dr. Willy Meyer,[1] in a paper with this title, refers only to that chronic form of tuberculous inflammation which ordinarily affects at first only one kidney. Among the first symptoms is renal colic, which is very commonly attributed to renal calculus. This error can be guarded against by a careful microscopical examination of the urinary sediment, or by a cystoscopic examination. The latter often gives a very characteristic picture—injection around one ureteral opening. Kelly's method of catheterizing the ureters is excellent in the female, and with Casper's ureteroscope this mode of examination can be conducted in either sex. Early extirpation of a tuberculous kidney effects a permanent cure.

Dangerous Hæmorrhage in Nephrotomy.—Herbert Lund[2] records a case of alarming hæmorrhage during exploration of the kidney for calculus in a boy aged nineteen. The left kidney was exposed by the usual lumbar incision without much difficulty. It appeared to be much congested, being of a deep purple colour, and was certainly

increased in size. No calculus could be made out by palpation, and no exploratory puncturing with the needle was tried. A small incision was then made in the convex border, and the finger inserted. The kidney substance was extremely soft and friable, and the hæmorrhage so profuse, that the suggestion was made that the enlargement was due to malignant growth. As plugging the wound failed to arrest the hæmorrhage, and the patient was evidently in a serious condition from loss of blood, it was deemed advisable to remove the kidney. After removal the kidney on examination proved to be a "large white" kidney, extremely friable, but there was no calculus.

The author remarks that the patient was kept under observation for some time, and it was only when all the symptoms of renal calculus appeared to be localised in the left side that operation was agreed upon. The friability of the kidney was alarming; the incision made was small, just sufficient to admit the finger comfortably; and although no force was used, the kidney was felt to split in several directions, and plugging was useless to arrest hæmorrhage. The relief to all symptoms since the operation has been complete, and the patient looks strong and well.

Partial Nephrectomy for Benign Tumours of the Kidney.—M. Tuffier[3] made a communication to the French Surgical Congress on this subject. Altogether he has performed partial nephrectomy in five cases—one for a large intra-renal cyst, two for benign tumours, one for kidney injury, and one for calculous pyonephrosis. In the two cases of benign tumours paroxysms of pain, resembling renal colic, were present. For partial nephrectomy the benign tumours of the kidney may be divided into two classes, viz., encysted tumours, and infiltrating tumours. The first class contains fibromas and cysts; in both cases dissection suffices for their removal. In the second class, of which adenoma is the type, a true resection of the renal parenchyma is necessary, and it must go well beyond the limits of the disease, even if the whole of the parenchyma is removed down to the pelvis. Another distinction is that in the encysted tumours locality is of no importance, for they can be removed even in the neighbourhood of the hilum. In infiltrating or adherent tumours excision should not be attempted unless they are at some distance from the hilum. As regards the operative technique, M. Tuffier uses the lumbar incision; he recommends temporary digital compression of the pedicle, and says that complete denudation of the kidney is essential, and the kidney must be sutured.

Reni-puncture in Albuminuria.—Reginald Harrison,[4] in a thoughtful and interesting presidential address, has drawn attention to the value of reni-puncture in some forms of albuminuria. He has met with cases in which albuminuria of some standing has completely

disappeared after digital exploration of the organ. He attributes this result to the release of tension exercised by the renal capsule.

"The grounds upon which it may be desirable," says Mr. Harrison, "to give relief by surgical means directly applied to the kidney may be illustrated by some of those cases of nephritis which are seen as consequent on scarlet fever, though it seems to me that their application is not necessarily limited to these. In the larger proportion of cases of scarlatinal nephritis the kidney complication is only of a temporary character, and the disappearance of albumen from the urine is both gradual and complete. Under such circumstances surgical interference could not be regarded as warrantable. On the other hand, there are a considerable number of cases met with where this is not so. These may be ranged into two groups. The first includes those instances where the kidney complication is from the onset of the gravest nature, and death is imminent with more or less suppression of urine, as in the case I have previously referred to, where after death the kidneys were found in a condition of most intense vascular engorgement. In these cases a fatal issue usually ensues most rapidly, the duration of life being largely determined by the degree of suppression that is arrived at.

"The second group of cases includes those where after a limited time the tendency, so far as the renal symptoms are principally concerned, is not in the direction of recovery. The amount of albumen does not decrease, tube casts as well as other evidences of disorganization are found in the urine, and the latter in quantity is below that which may be regarded as an average. Though a physical examination of these organs, either from the loin or by abdominal manipulation, may fail to give any indication as to their condition, tenderness on pressure is often complained of. It is from amongst the cases represented in these two groups that instances will be found where I believe the measures advocated may sometimes be advantageously practised. It is in these instances that death either rapidly occurs, or is brought about no less surely in the course of time by the more chronic forms of nephritis in conjunction with the cardiac complications which so frequently arise in connection with them."

Criticism by Editor.

This suggestion opens a wide and fertile subject. It is only fair criticism, however, to point out :—

(1,) That there are many and varied unilateral renal conditions, other than pure nephritis, which cause the appearance of albumen in the urine. I may instance encapsulated stone, cyst, carcinoma pressing on the pelvis.

(2,) Digital exploration of a unilaterally inflamed kidney is fraught with danger, and is not, as Mr. Harrison contends, free from risk. In some cases of chronic nephritis, especially when a recent attack has occurred, the renal tissue is friable beyond belief, the finger travels hither and thither, with but little let or hindrance, the feeling imparted being that of crushing through rotten fruit. The hæmorrhage is proportionately alarming; in one case of large white kidney it necessitated nephrectomy.

(3,) I believe that these inflamed kidneys are like tinder. The traumatism of even an aseptic finger lights up the entire kidney, and though the patient may not die after the operation, his temperature becomes hectic, and may remain so for months. I have been twice forced to nephrectomise after nephrotomy, and in each case the kidney was proved to have had an acute attack grafted by my examination upon a chronic condition.

REFERENCES.—[1] "New York Med. Journ.," March 28, 1896; [2] "Lancet," Feb. 15, 1896; [3] "Gaz. des hôp.," No. 126, 1895; [4] "Brit. Med. Journ.," Oct. 17, 1896, p. 1126, and "Lancet," Jan. 4, 1896.

KIDNEY (Imbedded Stones in the). *E. Hurry Fenwick, F.R.C.S.*

Whilst reviewing a series of one hundred renal operations which I have performed, I was, perhaps, most struck with the uncertainty of the diagnosis of atypic cases of stone in the kidney. As to the presence of stone evoking "classical" symptoms, we can but rarely be deceived. The history of recurrent attacks of one-sided colic with pain extending to the bladder, testis, penis, thigh or groin; of the expulsion of small calculi; of the aggravation of renal and radiating pains by exercise, dietetic imprudence, or climatic change; of the appearance of renal blood in the urine after exercise; of the absence of tubercle bacillus in the urine and the constant presence in that secretion of pus, blood, or crystals (the lower urinary tract being free from disease)—these are symptoms and conditions so typical, that they form the bold and well-known outlines of one of our best clinical pictures. But many cases of kidney stone do not conform to this type. Thus, every symptom may be absent and yet a large stone may be present, or the patient may only have one symptom—fixed pain. He may complain of intense localised renal suffering for years, and his trouble may prove on renal exploration to be due to a small prickly calculus of oxalate of lime. Or only a severe testicular pain may be present, or only severe sweating of the loin may exist, or agony may be experienced in the ureter as it bends over the brim of the pelvis, and a stone in the kidney be discovered as the cause for these atypic symptoms.

Fig. A

Fig. B.

I do not believe our knowledge is as yet sufficient to account for these latter vagaries, nor are we able to diagnose before operation that such extra-renal pains, without other guiding symptoms being present, are due to renal calculus. But it is otherwise as regards *fixed* renal pain. This often indicates *fixed* or *imbedded* calculus. Here, however, we have other diseases which simulate imbedded stone by causing fixed renal pain, such as unilateral nephritis, unilateral pyelitis, with abscess, tubercle in the parenchyma. Some light and perhaps a guiding point in diagnosis may be gained by considering the history of a series of uninflamed kidneys containing stone which have evoked fixed pain. I have endeavoured to do this, and my conclusions based on an experience of twenty-five non-suppurative cases are recorded for criticism, amendment, or corroboration.

Division of Renal Stones.—The operator recognizes, broadly speaking, three positions in the kidney as being liable to become the nidus of a stone : (1,) The cortex—the stone lying in a smooth hollow, almost under the capsule ; (2,) The parenchyma of the gland abutting on a calyx ; and (3,) The pelvis and infundibula.

Remarks on the Anatomical Continuity of these three Positions.—These three positions—obvious to the sense of experienced touch and sight—seem reasonably separate and distinct. In actual practice, however, every stone is probably in anatomical continuity with the pelvis. Even when stones are found under the capsule, a channel of communication exists between the hollow containing them and one of the calices of the pelvis. In many the channel is fine, in others free and wide from the atrophy of pressure. Upon the existence of these fine channels depends, perhaps, the differences which are observed in the symptoms induced by the imbedded stones.

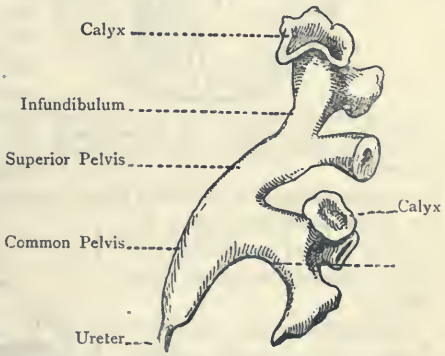

Fig. 36.—Diagram of Pelvis, from Henle.

The Formation of the Cortico-Pelvic Channels.—Our comprehension of a kidney pelvis and its branches is shaped more upon Henle's picture (*Fig.* 36), than actual dissection. We regard the calices as broad blind alleys. They may assume this character by backward

pressure it is true, and this is well shown in *Fig. B, Plate XVI*, which is the photo of a cast of a kidney pelvis and ureter which had become dilated by the obstruction of a vesical stone; but it is certain that in many of the obscure cases of renal stone backward pressure has not been exerted, and the calices are deep and narrow and are occupied by fixed stones. Jordan Lloyd has shown by means of a series of paraffin casts of the renal pelvis and its branches, that the calices are narrow deep grooves around the papillæ. In them a prickly oxalate of lime stone can be concealed effectually. The very narrowness of their openings into the pelvis proper may baffle an operator's finger, examining from the pelvis. Moreover, being at a distance from the pelvis proper they do not easily irritate it or evoke those classical pelvic symptoms which are of so much assistance in the diagnosis of renal calculus. *Figs.* 37 and 38 represent this well.

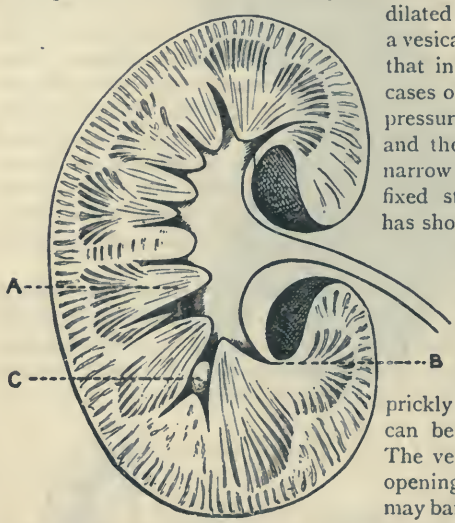

Fig. 37.—Section of Kidney-pelvis to show deep Calices (Tyson after Henle): *A*, Pyramids with Calices on each side; *B*, Deep calyx; *C*, Stone in deep calyx.

Formation of an Imbedded Stone.—In the unwashed deep furrow between the papilla and its ensheathing calyx small grit is liable to accumulate, to fuse and form a calculus (*Fig.* 37, *C*). The adjoining renal substance becomes indurated and finally atrophies by pressure, so that as the calculus increases in size it extends backwards or

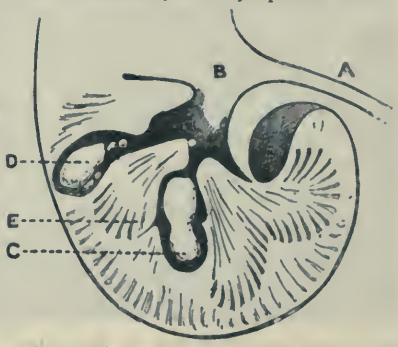

Fig. 38.—Diagram of lower end of longitudinal section of Kidney showing stones in calices making their way outward by pressure absorption: *A*, Ureter; *B*, Pelvis; *C*, Stone lying in hollow communicating with pelvis *B*; *D*, Multiple stone in ditto; *E*, Pyramid.

Fig. A

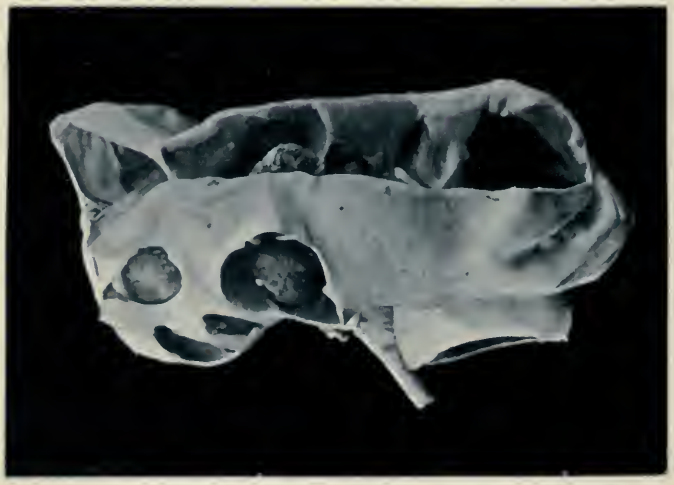

Fig. B.

laterally into the cortex (*Fig.* 38, *C*) until it may even be felt under the capsule (*Fig.* 38, *D.*) It rarely enlarges towards the pelvis, but of course it may when small escape into it. *Fig. D, Plate XVIII,* represents a calculus of twenty years' history; it weighed 1½ drachms. I removed it from a lower calyx. The blunt end was imbedded in the renal substance and was felt through the capsule. The sharp water-worn nose projected into the calyx by the side of the papilla. *Fig. B, Plate XVIII,* shows a calculus 150 grains in weight, of twenty-five years' history. It had made its way outward until it lay under the capsule covering the posterior surface of the middle third of the kidney. I believe such stones are usually found single, or in twos or threes. They do not reach the size or numbers of the true pelvic stone, and an educated eye and finger should detect the difference between multiple stones in parenchyma and multiple pelvic stones. (Compare conclusions.) *Fig. B, Plate XVII* (R.C.S. 3631), shows a kidney in which the pelvis and all its branches are dilated into large pouches containing calculi, over which the glandular substance is spread out and atrophied. *Fig. A, Plate XVI,* (R.C.S. 3621) is another and similar specimen.

Clinical Remarks.—I believe it can be shown that renal calculi differ in their symptomatology according as to whether they are entirely surrounded by parenchyma, or are in the pelvis in contact with sensitive mucous membrane. These form two groups. The chief symptoms of the imbedded (cortical) stones are fixed renal pain, clear urine, inability to sleep on the healthy side—whilst the stone in the pelvis, if small and moveable, causes the colics, blood and pus, and radiating pains. A third and intermediate group is met with which seems partly to partake of the characteristic symptoms of the pelvic and partly of the symptoms of the cortical group. This is, perhaps, due to the engagement of the stone in a deep calyx, and surrounded there by parenchyma, and yet remains in *free* communication with the pelvis. To illustrate this suggestion I give examples of stones in each position.

A Cortical Stone lying beneath the Capsule.—J. A., aged forty, was sent to me in 1894 by Dr. Eastwood, of Darlington. His history was as follows: Seven years ago, being in perfect health, he fell on the ice, and hæmaturia followed, the hæmorrhage lasting three weeks. He has never had any recurrence, but has suffered more or less pain in the right kidney ever since. Latterly this pain has been excessive. It is increased by exercise and relieved by lying down. It never radiates into his groin, testis or penis. He cannot lie on the unaffected side. He is forced to lie on the painful side. He has never had colics, but he

vomits. His urine was quite clear, acid, s.g. 1030, and contained a trace of albumen and many oxalates. The stream was good. There was no irritability of bladder. I removed by the lumbar incision an oxalate of lime stone (55 grains) with a spiculated surface. It was the size of half a monkey-nut, flattened.

To be noted is: (1,) The fixed renal pain; (2,) The oxalic, but otherwise pure urine, although symptoms had been observed for seven years; (3,) The inability to sleep on the sound side; (4,) The absence of bladder irritation. I suggest there was no communication with the pelvis, or only a very fine channel.

A Stone, imbedded in the Parenchyma, undetected by surface exploration.—B., aged fifty-two, sent by Dr. Alick Mackenzie, of Romford. Ten years ago pain commenced in left kidney, and he vomited, but the pain was fixed and did not radiate. There was no bladder irritation. Since then he has never been able to follow his occupation, the pain being so severe and constant. The pain varies with the water, the less urine the more pain. He cannot lie on the sound side; he must sleep on the painful side. Error in diet increases the pain; he cannot touch beef, pork, veal or pastry. After a severe attack of pain the urine is often coffee coloured. He can cover the area of pain in the loin with his thumb, and he has a very tender spot in the ureter as it bends over the pelvic brim. Urine 1022, clear, containing $\frac{1}{6}$ albumen; no casts; microscopic amount of pus, blood, urea, 2 per cent.

I removed an oxalate stone weighing 85 grs., covered with brilliant crystals. It was the size of a monkey-nut; also three smaller ones like peas, quite smooth, and five pin-head oxalates. They were situated in a hollow in the centre of the renal substance, on a level with the hilum. They could not be felt from the cortex or pelvis. Although no communication was found with the neighbouring calyx, I do not doubt one existed, for the pus and the blood in the urine demonstrated a connecting channel.

To be noted is: (1,) The fixed renal pain; (2,) The pus and blood in microscopic amounts in urine of good sp. gravity; (3,) The posture in sleep; (4,) The absence of bladder irritation.

A Stone occupying a bed in the Parenchyma, but protruding into Lower Pelvis.—G. L., aged thirty-six, sent to me by Dr. John Harris, of Dartmouth. He had been in several hospitals complaining of extreme fixed renal pain, from which he had suffered twenty years, but as his urine was normal his sufferings were considered to be feigned or exaggerated, or other and neighbouring organs were supposed to be at fault.

The pain was situated in the kidney, and he could cover its position

with the last phalanx of the thumb. It could be elicited also by percussion over the renal region, or by any succussion of the body. It came on with exertion. Dr. Harris noticed that the pain was more severe if the quantity of urine passed in the day was small (12 oz.), but relieved if the supply was normal (48 oz.). The patient never had had colic nor any radiating pain beyond a left testicular pain, if the renal suffering was acute. Sometimes he suffered from great frequency of micturition in the day, and occasionally had to rise five or six times at night, passing very little urine. He had never noticed blood. The urine was clear, s.g. 1020; only a few oxalates were visible; no pus or blood cells. The urine contained a slight amount of albumen. On examining the convex cortex of the tail of the kidney through the lumbar incision I felt the blunt end of a stone, and on extracting it noticed that the sharp water-worn nose projected into the lower pelvis. The stone measured 1¼ inches, and weighed 1½ drachms (*Fig. D, Plate XVIII*).

To be noted is: (1,) Variable secretion of clear urine (? reflex irritation); (2,) The frequency of micturition; (3,) The absence of the typical sleep posture, though the stone was imbedded.

Before proceeding further I must be allowed to comment on what I may term the "typical sleep posture." In imbedded stones, even those which are only partially surrounded by the fleshy substance of the kidney, the patient can only obtain rest by *overlying the stone.* If, in his sleep, he turns on to the sound side, the pain in the affected side wakes him. This condition is not always present. In three cases out of thirteen imbedded stones in which the symptom was enquired for, the patient could sleep on *either side.*

Pelvic Stone.—A stone occupying the pelvis, either triangular (*Fig. A, Plate XVIII*) or branched (*Fig. C, Plate XVIII*), and too large to engage the orifice of the ureter, may give rise merely to changes in the urine, denoting muco-pyelitis, and to fixed pain in the kidney, but as far as I can judge, the position in sleep differs, and the urine shows marked alteration.

In pelvic cases, if the mucous membrane of the pelvis is fretted or is inflamed by the stone, the patient lies on the unaffected side so that the kidney containing the stone is exposed to no pressure. The posture adopted in this latter form is best observed in infants and children who are passing gravel from one kidney; they nearly always turn over on the nurse's lap, so as to lie on the unaffected side. If the stone is smooth, and the pelvic mucous membrane uninflamed, there is apparently no discomfort noticed from sleeping on either side. I need hardly say this rule is not absolute. No rule is absolute in dealing

with so variable a sensation as pain. It is worth while, however, to collect a large number of cases to ascertain if it is sufficiently often met with as to constitute a reliable guide as to the presence and the position of a stone. I have, however, placed much reliance upon this posture test as indicating the presence of stone, and of its pointing to the position. For instance, I diagnosed and removed an oxalate of lime calculus from the tail of the kidney of a young man, whose only complaint was a fixed but severe renal pain and an inability to lie on the unaffected side.

Character of the Stones.—Nearly all the buried stones are composed of oxalates. Most of them are rounded or heart-shaped, and they are covered with fine glistening crystals. They are usually single. Some of the crystals are remarkable for their size and beauty. *Fig. E, Plate XVIII,* represents a calculus removed by my colleague Mr. S. Edwards. The point of this calculus is like a diamond for cutting glass. A second and less common (?) type is the grey pudding stone, and these are often multiple; and though several are found ensconced in the same hollow, they are not bevelled, but have an extraordinary polish.

Those stones which are found in a deep calyx are long and irregular. They are smooth, and generally blackened with blood; usually uratic in composition.

The large pelvic stones are smooth and generally composed of urates covered with a smooth layer of phosphates.

Conclusions:—

(1,) Broadly speaking, then, there are two great groups of simple renal stones. In each class characteristic pain may be felt.

In the true cortical the pain is fixed and continuous. It is liable to exacerbation upon movement, but not so much upon diet. It is relieved by rest. The patients usually are forced to sleep on the stone-affected kidney.

Those occupying the renal pelvis and obstructing the orifice of the ureter, evoke classical symptoms of radiating pain and renal colics.

Unluckily our cases are not all so simple. There are many cases which do not fall into these two groups. On analyzing their symptoms and the positions in which the calculi are found, I submit that their characters partake partly of both primary classes—the pelvic and the cortical; and that apparently they approach in similarity one or other of the two primary classes in proportion as they are situated nearer to the pelvis, or nearer to the cortex.

Thus, in some patients the urine remains clear and normal for years, but the pain radiates into the testis; in others with healthy urine colics are suffered from, and suprapubic pain is complained of. In

Fig. A.

Fig. B.

Fig. C.

Fig. D.

Fig. E.

others frequency of micturition and marked variation in the amount of urine daily secreted is noticed.

The clue to these varying and mixed conditions lies, I believe, in the small hollow in the parenchyma which contains the stone having some fine channel of communication with the pelvis, or in the fact that the stone in the cortex presses directly on the lower opening of the pelvis.

(2,) If a fixed, constant, severe renal pain, increased by exercise, jolting, or succussion—a pain which can be covered by the thumb pushed into the acute angle which the last rib builds with the erector spinæ muscle—is complained of, a calculus fixed in a deep calyx or imbedded in the renal substance may be the cause. If it should have started in youth and continued for years; if the patient is unable to sleep at night, except on the affected side; and if the urine being clear contains oxalates, the diagnosis of an imbedded stone is strengthened.

(3,) Fixed renal pain, however, is due to a variety of inflammatory causes—unilateral chronic nephritis, unilateral pyelitis, unilateral tubercle; but if no stone is present, the sleep posture alluded to is not often remarked, the patient preferring to sleep on the opposite, healthy side in these cases, and the urine usually shows indications of renal degeneration.

(4,) The pain of an imbedded stone is out of all proportion to the objective symptoms. The kidney may be unenlarged, the urine normal and clear; the patient apparently in the best of health.

(5,) The longer the history of the pain, the urine remaining normal, the greater will be the probability that the stone will be felt in a softened area through the cortex.

(6,) The presence of albumin, even to $\frac{1}{6}$, is not to be regarded as contra-indicating an exploration for the relief of pain, for in nearly every case of imbedded stone a trace or more of albumin was present. Even blood casts may be found after exercise. The specific gravity seems to become lowered in proportion to the area affected by the stone, and to its propinquity to the pelvis.

(7,) The discovery of a stone in the cortex should never cause the operator to neglect a systematic examination of other parts of the kidney. *Fig. A*, *Plate XVII*, is a good illustration of a ureteral stone co-existing with cortical stones.

(8,) The operation, if carried out aseptically and skilfully, is free from risk if no renal degeneration is present. If no hardness can be felt on the posterior or anterior surfaces, it is best in all cases where the sleep posture is a marked feature, to open the pelvis and examine the lower calices. An indiscriminate tearing up of the parenchyma with the finger is unsurgical, and results in serious degeneration.

(9,) Hæmorrhage from the tail of the kidney seems more profuse than would be expected. It is perhaps due to a largish branch of the artery which turns down to nourish the neighbourhood of the lower calyx.

(10,) The stone area of the kidney is the lower half. Most of the cortical cases are found on the posterior surface on a level with the opening of the ureter. The tail should always be carefully pinched, for the lower calyx dips into that part, and collections of stone can be felt, here, grating against each other.

(11,) *The Latency of Pain.*—Imbedded stones rarely, if ever, lose their power of producing pain. I believe that once an imbedded stone has formed it will go on worrying the patient until the end of the chapter. Of course there are exceptions; here is one: The patient, in whose kidney I discovered a large cortico-pelvic stone, asserted that he applied, after two years of continuous and severe pain, to an out-patient surgeon of one of the largest hospitals. This surgeon took up a long needle from his table and ran it into his kidney, and said he had touched the stone. Immediately the pain was relieved, and did not return for twelve years. It then recurred, and after a few more years of suffering he determined to be operated upon.

I puzzled over this for some time, and noticed how, in removing stones, the hollow which contained such fills with blood and covers over the prickly interstices of the stone. It was suggested to my mind that perhaps the needling had brought a coating of blood-clot around the stone, and this by transformation into a low form of connective tissue, had fixed and padded the stone. It raises a suspicion in my mind that in some of the patients in whom I could not find any stone, and yet who were much relieved by the operation, that possibly the manipulation of the cortex had enveloped the stone in a blood-clot, and so glued up the stone in its hollow.

KNEE (Dislocation of). (See "Amputations.")

LABOUR. (See also "Pregnancy" and "Puerperal State.")

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Rigidity of the Os.—Dr. Farrar and Dr. T. H. Weagly report rapid results from the local application of **Cocaine** in rigidity of the os.

Abnormal Labour Pains.—Schaeffer,[1] of Heidelberg, divides abnormal labour-pains into those which are purely atonic and those which are partially spasmodic in their character. There have been various divisions made of atonic pains, some referring them to the various portions of the uterus, and others dividing them according to the degree of atony which is present. The uterus contracts more fre-

quently when atony is present, but less effectually. Such pains do not increase in vigour as dilatation advances. The pauses between these pains are shorter than in normal cases. In the latter portion of the period of expulsion atonic pains are more frequent and longer than in normal cases, so that in some patients the same effect is produced, although in longer time, which is obtained by normal pains. The amount of actual work done by the uterus is found by careful observation to be greater than in cases of normal contraction. The work done by the uterus is most efficient in the first portion of labour: while compensation is wholly or largely effected in the latter part. It is observed that the latter portion of birth in these cases is practically accomplished by contraction of the abdominal muscles, and that these contractions are greatly influenced in a reflex manner by uterine pains. The diagnosis of atonic pains is often neglected, and this condition is mistaken for other complications.

In partially tetanic pains there is no special delay in the rupture of the membranes. The most frequent cause of this condition is endometritis of the cervix, resulting in slow dilatation and increased suffering. Another cause of this condition is frequent examinations during labour, and the irritation which they produce. An abnormal position of the uterus may also produce partially tetanic contractions. The treatment of this condition consists in placing the patient in a favourable posture, in the use of warm baths, and in hot vaginal douches.

Placenta Prævia.—Papers have been published recently upon this subject by Drs. Harris, Michaelis, and Marx,[2] in which the method recommended is: packing the cervix with iodoform gauze until it will admit a finger, followed by rapid digital dilatation of the cervix, by podalic version, and delivery. The operation is always performed under anæsthesia. The results obtained have been uniformly good, both as regards the mother and also the child, when the latter had reached the age of viability, and had not died before the operation was begun.

The chief objection urged against this method has been the difficulty in dilating the cervix; but in Harris's cases the average time consumed in this procedure was only nineteen and six-sevenths minutes, and the longest time required in any case was twenty-two minutes, while the same operation performed with the aid of Barnes's bags has often required several hours.

Savitzky,[3] as the result of seventeen years' experience, recommends **Antipyrin Enemata** as an obstetrical anæsthetic. He administers 1 gramme every two to six hours, occasionally combining the drug with

Opium (from 15 to 25 drops of Russian tinctura opii simplex, which contains 1 part of opium to every 10 parts). The pains are always relieved in fifteen or twenty minutes after the first dose. Frequently the patient soon falls asleep, which is especially beneficial in cases of spasmodic uterine pains and tetanic contraction of the os; hæmorrhage also diminishes. No untoward accessory effects were ever observed by the author.

For weak pains, where simple atony of the uterus is present, small doses of **Ergotine,** given by hypodermic injection, are found useful. It was observed to produce an effect in about eight minutes after its administration.

M. Bossi,[4] of Genes, makes a practical application of a theory propounded by Drs. Paoletti and Mosso, that **Sugar** taken internally might be found to exhibit as stimulating an effect upon the group of uterine muscles as it has on voluntary muscles. Bossi administered a dose corresponding to an ounce of sugar in about eight ounces of water. A most excellent effect was observed after the first dose in all but one of the cases, the ecbolic action showing itself in from twenty to forty minutes and nearly always lasting till the birth of the child. In the other case a second dose had to be given. The contractions were always quite regular and free from any tetanic tendency.

Third Stage of Labour.—Treatment of the third stage of labour forms the subject of a recent article. The character of the treatment may be summed up under the head of various drugs that are employed, namely: anæsthetics, hæmostatics, styptics, disinfectants, and stimulants. The contra-indications to the use of the anæsthetic in labour are: anæmia, goitre, myocarditis, dyspnœa and collapse, severe disease of the heart, and placenta prævia.

As a hæmostatic, by far the best remedy is the fluid **Extract of Ergot,** which should be administered just after the child is born and after the placenta is ready to be discharged. Care should be taken that clots are not retained in the uterus after its administration. If hæmorrhage becomes active, **Ergotin** may be given hypodermically. Sometimes, if the second stage of labour is slow in coming to a close, small doses of extract of ergot, with **Digitalis** and **Quinine,** may be given to increase the uterine contractions, but this should not be repeated. Should the hæmorrhage be a slow oozing one, which is persistent, injections of the **Perchloride of Iron** may be given, but as a general rule it is best to curette the uterus to relieve it of any particles of placenta which may be adherent to it, and this is usually sufficient to check the hæmorrhage.

In the way of disinfectants we should remember that absolute

cleanliness is better than the use of disinfectant drugs, but should there be any reason to believe that the lying-in woman is infected with gonorrhœa or leucorrhœa a sublimate injection should be employed, not only before but after parturition, the strength of it being about 1 to 5,000 of water.[5]

Umbilical Cord.—Budin[6] has devised a new method of ligating the umbilical cord with strong linen thread, as follows: The cord is first tied by encircling it with the ligature, and tying firmly in a surgeon's knot; one portion of the ligature is then passed half-round the cord, and the two strands are again tied perpendicularly to the first, the knot being brought down upon the cut end of the cord about at its middle. This results in the separate ligature of one-half of the cord containing the umbilical vein, and one of the arteries. The ligature is then passed in a similar way about the other umbilical vessel, and the knot again cut in the middle of the cut end.

Post-partum Hæmorrhage.—McNeill[7] tells us, first, that in cases of post-partum hæmorrhage the treatment by **Transfusion** or sterilized intravenous **Saline Solutions** has long received well-merited attention; and, secondly, that the value of voluminous intestinal enemata of **Warm Water** and **Salt** in such cases is insufficiently appreciated, and such treatment applies to military and other surgery as well as to obstetric practice. But to be effectual the tube must penetrate the sigmoid flexure and command the absorptive powers of the descending, transverse, and ascending colon; therefore a long tube must be used, and the injection pushed to tension limits.

A piece of lint saturated with **Turpentine** and passed into the vagina or uterus is often effective.

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LACHRYMAL PASSAGES (Diseases of).

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In a very complete paper discussing the treatment of diseases of the tear passages, Ramsay[1] says that when the cause of *lachrymation* has been established, the treatment naturally suggests itself. If it be due to *eversion of the punctum*, the indications are for the employment of mildly **Astringent Lotions,** combined with **Alkalies,** to subdue the con-

junctival inflammation, and if these be insufficient, the application to the palpebral conjunctiva of solutions of **Nitrate of Silver,** the **Crayon of Alum,** or even **Sulphate of Copper,** is demanded. In case, however, the eversion of the lids is too great to be overcome by these simpler means, the canaliculus must be slit as far as the lachrymal sac, so that the duct may be converted into a small gutter along which the tears may escape. In performing this operation the old rule of keeping the lid on the stretch and turning the cutting edge of the knife slightly backward toward the eyeball must not be neglected, otherwise the gutter may not be in the proper position for carrying away the tears. Should there exist any refractive error it must be corrected. [In many cases epiphora is due to occlusion of the duct on account of a swollen mucous membrane. In such cases it is useless to sacrifice the canaliculus, as moderate **Dilatation of the Puncta,** followed by injections of tepid antiseptic and astringent solutions, cause the swelling to disappear and the lachrymation to cease.—Ed.]

For the treatment of the milder cases of *blennorrhœa of the lachrymal sac,* the patient should be taught to keep the sac empty by pressure. The sac and the nasal duct should be washed out daily, or every other day, with tepid alkaline antiseptic solutions. [Excellent results have been obtained from irrigating with a 1 in 2,000 solution of **Formaldehyde** followed by an astringent solution, such as alum and zinc.—Ed.] The nasal mucous membrane should also receive any required attention.

In the more severe cases where the contents of the sac cannot be forced out by pressure, and where the solutions do not pass downward into the nose but regurgitate through the canaliculi, means must be employed to make the duct permeable. The first of these is the **Introduction of Small Probes,** and much care must be taken to avoid tearing the mucous membrane or creating a false passage. When the introduction is being effected, and the stenosed portion is reached, gentle but firm pressure should be made, and any attempt to effect a forcible passage avoided. Should permeability be established, the probes are then passed two or three times a week until they are no longer required.

In some cases, however, the probes cannot be introduced, and it becomes necessary to open the ducts by other means. A Weber's knife is employed, and after slitting the canaliculi in the usual manner, if it has not been previously done, making the opening into the sac itself, the cutting edge of the knife is turned forward and the anterior wall incised as freely as possible. The knife is then pushed down-

ward into the duct and the stricture divided by turning the edge in every direction. Frequent irrigations with antiseptic and astringent solutions are then to be employed. If lachrymation is not entirely relieved, the use of hollow probes through which the injections may be made, or larger probes kept in position for ten minutes to half an hour, are recommended; but no case has come under observation requiring the very large probes used by Couper and Theobald. After the stricture is dilated, a style is employed to prevent its closure and to keep open a passage for the tears.

Occasionally the stenosis is caused by a bony stricture, when it becomes necessary to perforate the lachrymal bone and thus establish a direct passage into the nose. In those cases where the nasal duct has become obliterated, or where there is much necrosis of bone, or where the sac walls are thickened and inelastic, it occasionally happens that though the duct has been made permeable, the lachrymation is but slightly relieved. In these cases it is necessary to open the sac freely, to cleanse the internal surface from all discharge, to pack the cavity with iodoform gauze, or to cauterize freely the lining membrane and allow it to granulate. As a rule, though the caliber of the sac is much reduced, it is not entirely obliterated, and the above treatment is preferable to extirpation.

Acute dacryo-cystitis is generally seen too late to permit of anything being done to retard its progress. If it should, however, come under observation sufficiently early its course may be arrested by evacuating the contents of the lachrymal sac by **Pressure,** by the use of an **Evaporant Lotion** to diminish the pain and retard the inflammatory progress, by the administration of a **Purgative** and the application of **Leeches.** On the contrary, if pus be present within the sac, **Hot Fomentations** should be employed, assisted by the administration of **Morphia** hypodermically if the pain is sufficient to require it, and by the **Free Evacuation of the Pus** by incision as soon as fluctuation can be detected. The passage is then cleansed, a probe passed into the nasal duct, and if this be open, the contents of the sac will pass into the nostril, allowing the external opening to heal. The duct is irrigated through the canaliculi at frequent intervals, and should a small fistula remain, if the permeability of the lachrymal canal be established, the edges may be cauterized by means of a platinum wire connected with an electric battery, when the raw surfaces thus made will usually unite. In all cases it is necessary to pay due regard to the general health, to antagonize any constitutional taint that may be present, and to eradicate any pathological conditions of the nares that may exist.

Dr. Walter Vulpius[2] describes his method of dealing with *stenosis of the lachrymal duct* as follows: The lower canaliculus is partially slit, and is at once followed by rapid dilatation of the stenosed naso-lachrymal canal with Bowman's probes until a No. 6 can be easily introduced. If it be impossible to introduce probes at once, the obliterated canal is opened with the knife of Stilling or Bowman. A permanent probe, devised by himself, is then introduced and worn constantly. All this takes place at the first sitting, and should there be any reaction it is combatted with cold compresses, and should not last longer than a few days. The probe is made from common alloyed silver, as used by jewellers, is of the diameter of a No. 5 Bowman probe, and consists of a long vertical arm which extends to the inferior nasal meatus and a short horizontal arm which lies in the partially-slit lower canaliculus. The instrument is solid, the tears passing down by means of the capillary action between it and the wall of the canal, and both ends are blunt, the horizontal being somewhat flattened towards the eyeball. It should be adapted to individual cases, so as to avoid excessive pressure. It is claimed that the probe can be worn for years without irritation, that it is not necessary to irrigate the canal at any time, that purulent disease of the duct is no contra-indication to its use, as it is of equal service in these cases on account of the establishment of drainage, so that the normal tears can pass through the canal and "effect a physiological metabolism in the diseased mucous membrane of the sac."

For *irrigating the lachrymal canal*, Thorington[3] recommends the use of a **Lachrymal Douche** in place of the lachrymal syringe. It may be easily constructed by attaching to one end of a piece of small rubber tubing, about six feet in length, a glass tube bent at right angles, and to the other end the nozzle of a lachrymal syringe. The glass tube is inserted into a bottle containing the irrigating fluid, and the amount of pressure is regulated by the height at which it is placed above the patient's eye.

For the swollen mucous membrane of the lachrymal passages, Thomalla[4] advises the use of **Rhinalgin.** His plan is to insert three times a day into the nostrils of these patients a small quantity of rhinalgin. The patient is then to lie down, and as soon as the rhinalgin begins to dissolve it is to be pushed farther back into the nostril until it is all absorbed. On a second or third day, as a rule, the condition of the sac and duct is much improved by a disappearance of the swelling in the mucous membrane lining the nose and nasal duct. If the case is chronic, the treatment by rhinalgin must be kept up for weeks.

PLATE XIX.

Fig A.

Fig B.

Fig C.

Fig D

Fig E

Fig F

Theodore Fisher
et Watson Williams, *pinxt.*

MEDICAL ANNUAL, 1897.

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LARYNX (Cancer and Lupus of).

P. Watson Williams, M.D. Lond. (Bristol.)

Clinical Illustrations of Diseases of the Larynx.—In the last edition of the "Medical Annual" I drew attention to some of the danger signals of commencing laryngeal cancer, and frequent allusion has been made in this and previous isssues to characteristic features in laryngeal disease which enable a differential diagnosis to be made. Illustrations of a few examples of cases recently under my care may be of some practical service to practitioners in depicting some of the main points of distinction between some of the common diseases affecting the larynx.

Fig. A (*Plate XIX*) represents the laryngoscopic appearance of a case of painless tuberculous disease. Pain was not present in either case represented by *Fig. A*, *B*, *C*, or *D*. We note first that which is so suggestive of tuberculous disease, the general pallor, the greyish-pink anæmic aspect of the mucous membrane of the ventricular bands and aryteno-epiglottidean folds, while even the normally pinkish-yellow epiglottis is paler than usual. This anæmic appearance of the mucous membrane is usually equally pronounced in the soft palate and fauces, and is due to the general ischæmia from vascular contraction in phthisis. While its presence is always suggestive of tuberculous disease, its absence does not by any means exclude tuberculosis, and we not infrequently find considerable hyperæmia associated with tuberculous deposit. There is no turban-shaped swelling of the epiglottis, nor pyriform swelling of the arytenoid mucous membrane in this case, the tuberculous infiltration and ulceration being confined to the true and false vocal cords. On the right cord we see a fringe-like pale grey papillary out-growth, and careful examination reveals a superficial ulceration extending to the ventricular band. The margins of the ulcers are flush with the surrounding mucosa and are, in the so-called secondary period, not easily determined exactly. Had this been a syphilitic larynx we should probably have seen no general pallor, the margins of the ulcers would have been defined, and well marked by a bright hyperæmic zone. Moreover, bilateral symmetry is usual in "secondary" laryngeal syphilis. The voice was hoarse and weak, but owing to the free movement of the unaffected arytenoid regions the diseased cords could be fairly well apposed in phonation, so that the patient was not aphonic. The patient complained of

soreness after talking much, but otherwise there was no pain. Had the arytenoid mucosa been ulcerated or the epiglottis affected, the pain, especially on swallowing, so suggestive of tuberculous laryngeal disease, would doubtless have been a notable feature.

The diagnosis of tuberculous disease was further corroborated by the presence of pulmonary lesion, the finding of tubercle bacili in the sputum, etc. I desire, however, to emphasise the fact that the undoubted existence of pulmonary tuberculosis is not sufficient to warrant a laryngeal lesion being diagnosed as tuberculous, though, of course, such co-existent systemic tuberculous disease is strong presumptive evidence. We should always bear in mind that two distinct affections may be concurrent. Thus pulmonary tuberculosis may be associated with malignant disease of the larynx, or with syphilis. Quite recently a patient came to me with pulmonary tuberculosis following influenza, and complaining of hoarseness. Laryngoscopic examination revealed symmetrical superficial ulcers on the vocal processes, extending to the ventricular bands. These ulcers were surrounded by a zone of hyperæmia, the rest of the larynx being only slightly hyperæmic. These ulcers were characteristic of the "secondary" laryngeal syphilis, and *very rapidly* healed completely with the administration of **Iodide of Potassium** and **Mercury**, while appropriate treatment for the pulmonary lesion was also prescribed.

The larynx shown in *Fig. A* was treated mainly by **Curettement** and the local application of concentrated **Lactic Acid**, and, subsequently, of pure **Guaiacol**, and the use of a 20 per cent. guaiacol spray, combined, of course, with general treatment. The larynx was greatly improved, so far indeed that the patient could talk freely, and even shout.

Fig. B, a case which Dr. James Swain asked me to see, represents marked laryngeal stenosis in tertiary syphilis. The patient could only speak in a harsh whisper, had a hoarse brassy cough, and considerable dyspnœa. Syphilitic disease of the larynx had existed for a long period, and respiration was never free, and when she "caught cold" breathing became so embarrassed that she was admitted to the Royal infirmary, and though immediate operation was avoided by putting her in a steam bed and administering iodide of potassium, it was deemed advisable to perform tracheotomy, with a view to permanent retention of the tube. Here we note that the vocal cords have been the seat of old syphilitic ulcers and cicatrices, the anterior third of the cords being united. The actual seat of stenosis is infraglottic, probably due to perichondritis at the cricoid ring. The posterior boundary of the glottis is occupied by syphilitic

mammillated out-growths. Such growths are usually less succulent, but here there is some inflammatory œdema giving a pink, tense, and fleshy aspect. The aryteno-epiglottidean fold on the right side has evidently undergone cicatricial contraction. I know of no disease, except syphilis, that would produce such a laryngeal condition as existed in this case. With such extensive syphilitic disease, especially where there is evidence that the stenosis is mainly infraglottic, I should not hesitate to recommend tracheotomy as dangerous; obstructive dyspnœa would almost certainly occur at frequent intervals. A glottic syphilitic stenosis may be relieved by dilatation with O'Dwyer's tubes. O'Dwyer has recorded several eminently favourable results by this method. But only the greatest patience and perseverance on the part of both the patient and a skilful laryngologist can yield anything like a good result, and even in the most favourable cases an intubation tube must be passed every few months after the stenosis has been relieved in order to counteract the inevitable tendency to contraction so characteristic of syphilitic cicatrization. Such a case in the one depicted would be better off, in my opinion, with a tracheotomy tube with De Santi's valve. In his tube the valve is readily detached by the patient for cleansing. Where the laryngeal affection is quiescent the patient can phonate, as the valve directs the expiratory blast through the glottis, while the valve could be left out during the periods of marked expiratory stenosis. In doing a tracheotomy in these cases, the lower operation is often to be preferred, as stenosis of the upper part of the trachea may be present. Even if such a case is operated on for temporary relief of dyspnœa, and the stenosis appears to be supraglottic, a laryngotomy should not be chosen, for stenosis infraglottic is very frequently present and would be unrelieved.

A case of pachydermia diffusa is seen in *Fig. C.* This case I at first diagnosed as epithelioma, as the fringe-like out-growths on the cords were somewhat redder and more vascular when the patient, an old Crimean veteran, came to me. The glottic aperture on deep expiration was slightly narrower than in the picture, indicating very considerable fixation of the cords. Doubtless this defective abductive power was due to some old standing false ankylosis of the crico-arytenoid joints, though there was little evidence of arytenoid inflammation at the time. As the patient was considered too old and feeble for laryngectomy, if it was cancer, I purposely avoided completing the diagnosis by removing a fragment of the growth for histological examination, although this would of course have been done prior to any radical operative treatment. If in a case of suspected laryngeal cancer it is decided

that, in the event of the diagnosis proving correct, a radical operation will be consented to by the patient and approved by the medical attendants, a fragment of the growth should always, where possible, be previously submitted to histological examination. If the microscopical examination affords positive evidence of malignancy a doubtful diagnosis will have been cleared up, and one has no hesitation on this score in undertaking a suitable operation. Negative evidence does not absolutely exclude malignancy, for the portion removed, especially if a very small fragment, may not reveal the true character of deeper portions after growth. Nevertheless we should not feel justified in advising operation unless the clinical characters were unequivocal, and even then another and deeper fragment of the growth should be most carefully and completely submitted to the microscope. On the other hand, where no radical operation is admissible either on account of the general condition of the patient or owing to the situation and extent of the growth, in the opinion of most authorities, it is much better not to artificially produce a wound in the growth, which, if malignant, may not heal, and not improbably accelerate the growth of the malignant neoplasm. But while I have never known pachydermia laryngis, *per se*, produce such marked abductor paresis, there are other features in the larynx under consideration which point to pachydermia laryngis rather than malignant disease. Thus, while the general appearance of the growth and its situation on the posterior half of the cords suggest the possibility of malignancy, we observe that out-growths are more or less symmetrical, and that while both vocal cords are extensively involved the inter-arytenoid region is apparently unaffected. These features in the case, especially the last mentioned, argue strongly malignancy. It will be seen too that there is a perceptible cup-like depression on one side into which the most prominent portion of the out-growth on the opposite side fits, a feature which is so constantly present in pachydermia laryngis. It is owing to this fitting of the growth on one side with that on the opposite cord which prevents the voice being lost, or so markedly altered in pachydermia as compared with the early and rapidly increasing hoarseness of malignant infiltration or growths on the vocal cords. The ventricular bands were likewise involved, and, as a consequence of their being thickened, the true vocal cords were concealed during phonation *(Fig. D)*, a narrow slit only appearing between the false cords.

In *Fig. F* is represented a case of extrinsic malignant disease involving the epiglottis. The epiglottis is œdematous and highly injected, and growing from the anterior surface are nodules of growth

which proved on histological examination to be epitheliomatous. The growth had apparently begun in the right posterior fold of the soft palate and extended to the epiglottis, involving also the base of the tongue. It was considered unfavourable for removal, and a year later it had greatly extended and caused much pain. Pain however was very slight when the drawing was taken.

Fig. E is from a case of lupus of the larynx. The patient only complained of slight hoarseness and dryness of the throat. The epiglottis had to a great extent disappeared, but though the typical nodules of lupus were plainly observable, no ulcers were to be seen. A small nodule had also appeared in one vocal cord. There was some sticky secretion, especially between the cords, which tended to stretch across the glottis when the cords were first abducted in respiration after phonation, as shown in the drawing. The appearance is typical of laryngeal lupus in the earlier stage, before more widespread infiltration and cicatrisation, with or without ulceration, have produced the peculiar circular larynx with a small circular glottic opening.

LARYNX (Neuroses of the). *P. Watson Williams, M.D., Lond. (Bristol.)*

Phonic Spasm.—Ronald Daniel[1] records a case successfully treated by **Electricity.** The patient described the effort to speak as being most distressing, as, though articulation proceeded, he was unable to produce any sound for an interval varying from one to two minutes. A careful examination with the laryngoscope revealed no abnormality of any kind, and his general condition was all that could be desired. He had been under medical treatment and tried various remedies, without however any, or but a little temporary, improvement. Under such circumstances Daniel decided to call in the aid of electricity, and to this end used the constant current for from fifteen to twenty minutes every day for a fortnight, after which time, as progress was favourable, he reduced it to three times weekly. Daniel employed sponge electrodes of such a size and shape as could conveniently be placed on either side of the larynx, and also varied the treatment on each occasion by directing the current antero-posteriorly, placing the anodal electrode over the larynx, and the kathodal one on the back of the neck. The strength of the current used varied from two to three milliampères, and the case was treated for nearly six weeks, improvement becoming more and more apparent. It ended happily in the disappearance of the patient's malady, of which two months afterwards there had been no return.

Phonic spasm appears to have resulted from injury to the jaw in a patient whose case is recorded by Tuck.[2] A clergyman in endeavouring to utter the letter H, set up a spasmodic action of the vocal cord

which took him a few seconds to recover from ere he could proceed with his discourse. This remarkable affection gave rise to much speculation among the members of his congregation as to the cause. He was seen by Tuck, who noticed a great deflection in the right inferior maxilla where the first molar and second bicuspid were formerly situated, and interrogated him as to the cause. It appears that these teeth had been extracted by a non-qualified man, who had removed a large portion of the jaw with them; so much so, indeed, as to injure both the nerve and artery. It occurred to Tuck that this mischief was the cause of the malady, produced by reflex action on the particular cord; therefore, Tuck considers that there can be little doubt that the damaged part described had originated the affliction.

Fig. 39.—Illustration of a lost intubation tube found in the trachea.

REFERENCES. — [1] "Lancet," Feb. 1, 1896; [2] Ibid., May 16, 1896.

LARYNX (Röntgen Rays applied in Affections of the).

P. Watson Williams, M.D., Lond. (*Bristol.*)

The application of the "new photography" to laryngology has been investigated by Rowland, Waggett, MacIntyre, Mount Bleyer, and others.

MacIntyre[1] has been able to photograph the human larynx, the picture obtained showing the base of the tongue, hyoid bone, thyroid, and cricoid cartilages, with the epiglottis; the opening at the upper part of the œsophagus was also seen, and the spine was indicated behind.

Experimenting on the dead subject, he had also been able to obtain excellent photographs of foreign bodies in and around the region of the larynx, as well as ossification in the cartilages.

With regard to the cryptoscope, the light easily penetrated the tissues of the neck and chest, and he has seen sufficient of the former to enable him to say that many foreign bodies might be detected with the eye without photography at all. He instanced a case that had been sent to him, the patient having swallowed a halfpenny six months previously, and on examining him by means of the fluorescent screen, the author could easily see the round, black shadow of the coin at the level of the third dorsal vertebra. This was important and interesting because the boy referred the pain to the cardiac orifice of the stomach.

Mount Bleyer[2] has described his photo-fluoroscope, and gives several illustrations which show conclusively how useful the rays may be in locating foreign bodies in the larynx or trachea. (See *Fig.* 39; also "Leprosy" for 'New Photography.')

REFERENCES.—[1] "Brit. Med. Journ.," May 2, 1896; [2] "Laryngoscope," July, 1896.

LARYNX (Tuberculous Disease of).

P. Watson Williams, M.D. Lond. (*Bristol*).

Paul Bergengrun[1] relates the histories of seven cases of laryngeal tuberculosis which healed without surgical treatment, He used locally **Lactic Acid** and **Iodoform.** One patient was curetted and the lesions healed, not only where the parts of the larynx were curetted, but also where they were not. In one case he used **Tuberculin**, which caused intense local reaction, but resulted favourably in the end.

Dr. Spengler,[2] in his dissertation (St Petersburg, 1895), shows that **Parachlorophenol** has considerable effect on the tubercle bacilli in laryngeal phthisis when locally applied. After having observed its action by experiments on animals, twenty-six patients who were suffering from tuberculosis of the larynx and other organs were treated, ten of whom appeared to be completely cured. The parachlorophenol was mixed with glycerine in various proportions, and when applied to the ulcerations on the mucous membrane of the larynx, was found not only to cause no irritation, but to have a soothing effect as well as a cicatrising action, the soothing effect being much more prolonged than that obtained by the use of cocaine. It was found applicable in all classes of cases, and so is preferable to lactic acid and even to surgical manipulation. In cases of lupus of the mucous membrane, too, it acted very beneficially. Parachlorophenol was found, by experiment, to have a very energetic microbicidal action on tubercle bacilli, whether in pure cultures or as existing in the sputa of phthisical patients

While the personal experience of many eminent laryngologists, and I may certainly add, my own, warrants the statement that in favourable cases localized lesions may be made to heal by appropriate measures, I think that all who have had opportunities for observing a considerable number of cases will endorse Wright's [3] remarks when reviewing the foregoing reports: "The most encouraging part of the laryngeal work is the relief given to these patients from the atrocious pain. By removing the diseased tissue within sight and within reach, it is exceedingly probable that the source of the pain is removed. The accessible parts are the moveable parts, and the parts affected by the movements of deglutition. Dansac has described the great amount of nerve involvement in these infiltrations. These gentlemen of high reputation have presented certain facts, *i.e.*, that some of the patients on whom they have operated have recovered, and a large proportion have been relieved of pain. Theoretical explanations or objections are perhaps not in place, but long experience has discouraged us. Accurate pathological knowledge has taught us how deep, how widespread the tuberculous infection is. We appreciate also that, although we have found a micro-organism whose presence is necessary to the lesion, the principal factors in the etiology and in Nature's therapy are unknown. A careful study of the literature of the subject induces scepticism. Entirely too many cases are, according to reports, cured by entirely too many different methods of treatment."

Wright, arguing from a certain analogy between operations on cases of tuberculous peritonitis and meningitis, and those on tuberculous laryngeal disease suggests that possibly the surgical procedures in some way stimulate the vital resisting powers of the system.

Kuttner [4] strongly pleads for the more active treatment of laryngeal phthisis. He gives short details in which three patients were well three and four years after **Curetting,** laryngo-fissure having been previously done in one case. The state of the lungs improved considerably in two cases, and to a less extent in the remaining one. Further, a case of pharyngeal tuberculosis healed after repeated scraping, and the application of the **Galvano-cautery** and **Lactic Acid.** In two other cases the patients were in good condition eight months after incisions had been made into the infiltration, and lactic acid rubbed in. In the first instance efforts were made to cure the disease by the application of disinfectants, and then by the removal of the diseased tissue as far as possible. The author only uses powders when there is abundant secretion, and cleansing inhalations are always employed before the application of any remedy. Lactic acid is to be used in cases where there is ulceration. If the above means do not answer, then incision,

curetting, the galvano-cautery, electrolysis, tracheotomy, laryngo-fissure, remain. With high temperature or advanced pulmonary disease, these measures cannot be recommended except to save life. Incision may be practised in hopeless cases where a few foci of infiltration are present. In some cases curetting gives good results, but all diseased tissues must, as far as possible, be removed. The galvano-cautery may supplement the curette, but larger bits of tissue should be cut off rather than burnt away. Tracheotomy has been of service even in cases where there was no danger from laryngeal stenosis, perhaps owing to the rest which it afforded the larynx. The author thinks that in some cases laryngo-fissure is to be preferred to the endo-laryngeal use of the curette, especially in cases where the disease lies in the posterior wall of the larynx. Besides the case above referred to, the author has performed thyrotomy in three other cases. One of these cases died a few weeks after the operation from pneumonia, but the two others lived for over a year.

The plan of attacking the tuberculous disease *in situ* by means of subcutaneous injections appears to have occurred to several observers. Heryng has employed the method, and for some years I have occasionally used, with fairly successful results, considering the character of the disease, a "laryngeal hypodermic syringe," which was figured in the "Medical Annual" for 1896 (p. 587).

Chappell,[5] of New York, has reported his experience of injections of **Creasote** by means of a somewhat similar instrument. He recently exhibited a case[6] of undoubtedly well marked tuberculous laryngeal disease which underwent cure by means of topical applications three times weekly. Delavan, who had seen the case several times during the treatment, corroborated the remarkable improvement under Chappell's treatment. Similar results were obtained by this method by Hubbard and by Hance.[7]

The following applications are recommended for the relief of pain in the affection :—

℞ Hydrochlorate of Cocaine	4 grs.	Cherry-laurel Water, made by distillation	2 ozs.
Hydrochlorate of Morphine,	2 grs.		
Antipyrin	30 grs.	Water sterilized by boiling,	2 ozs.

From 3 to 4 tablespoonfuls of this solution may be used by atomization in every twenty-four hours.

Other persons prefer the use of very finely made powder, as follows :—

℞ Hydrochlorate of Morphine,	3 grs.	Powdered Gum Arabic	1 drachm
Sugar of Milk	1 drachm		

Make into a very fine powder which is to be puffed into the larynx.

Other cases seem to benefited by the atomization of alkaline solution, as, for example, that of **Vichy Water.**

REFERENCES.—[1]"Archiv. f. Laryngol. und Rhinol.," Bd. 11, Heft 2, L. Wright, *loc. cit.*; [2]"Lancet," Dec., 1895; [3]"New York Med. Journ.," Feb., 1896; [4]"Berl. klin. Woch.," Jan. 20, 1896, and Epit. "Brit. Med. Journ.," Feb. 29, 1896; [5]"New York Med. Journ.," March 30, 1895; [6]Report of meeting of New York Acad. of Med., "Amer. Med. Surg. Bullet.," Dec. 15, 1895; [7]"Journ. des prat.," March 14, 1896, cited from "Ann. des laryng."

LEAD PALSY (in Children.) *David Hardie, M.D., Brisbane.*

Since 1890, when lead palsy was first recognized as one of peripheral neuritis, due to the presence of lead in the system, forty-four cases have been admitted to the Children's Hospital in Brisbane. The disease is therefore at the present time not a rare one, and although not noticed till 1890 it is highly probable, that had the symptoms been properly interpreted, it would have been found to be as common prior to that date as it is now.

It begins insidiously with symptoms of intestinal irritation. The child complains of abdominal pain, accompanied by vomiting, and perhaps also diarrhœa, has a light rise in temperature, and lies in bed in the semi-prone position with the legs drawn up under him. Occasionally these symptoms are preceded by a convulsion or hæmorrhage from the nose. In a few days the child is apparently well. After the lapse of some weeks or months, there is a recurrence of these symptoms in an aggravated form. The child then becomes more or less anæmic, complains of pains in his limbs, and is observed to walk with the characteristic foot-drop, and an examination shows wasting and partial paralysis of the tibialis anticus and extensors of the toes. A blue line is also sometimes found on some parts of the gums.

Under treatment the child recovers the use of the paralysed muscles. The next attack shows more distinct foot-drop, more marked wasting and paralysis of the leg muscles, and now perhaps for the first time, also paralysis and wasting of the extensor muscles of the fingers, causing wrist-drop. The faradic and galvanic currents elicit the usual "reaction of degeneration." The muscles of the thumb, and in advanced cases, the interossei are similarly found wasted. Contrary to what takes place in adults, it will therefore be observed, that in children the muscles of the lower extremity are paralysed and wasted before those of the hands. It will also be found that under treatment the former are the last to recover.

That the paralysis is due to the presence of lead seems beyond doubt, for not only do the usual symptoms of lead poisoning present

themselves, but traces of lead have been found in the urine in some cases, though not in all, by the Government Analyst. So far, we have not been able to discover the source of the poison. At one time it was thought to be associated with the chewing by children of the tin foil surrounding cigarettes, chocolates and such-like, some of which were found by Dr. Love to contain lead in abundance. Latterly suspicion has fallen more on our tank water and manufactured drinking waters. These have been examined by the Government Analyst, with the result, that in certain ginger beers there was found 1 milligramme of lead in each bottle of twenty-four ounces. It has not yet been discovered in tank water. Further specimens of the latter from lead infected houses have lately been sent for examination, and the result will be watched with interest. It is worth noting that zinc, to the extent of a grain to the gallon, has been found present in tank water.

The treatment has consisted in the administration of **Iodide of Potash,** combined with **Massage** and **Electricity,** and in **Change of Residence.** In order to prevent further developments, permanent change of residence should be insisted on, should the case be recognized in the early stage.

LEPROSY. *G. Armauer Hansen, M.D., Bergen.*

In a monograph written by Dr. Looft and myself, "Leprosy in its Clinical and Pathological Aspects," and published in England last year,* we stated in a note on page 51 that Dr. Lie would describe a case of leprous affection of the lungs. This he has done in the "Norsk Magazin for Lägevidenskab." The leprous affection is very different from the tubercular one in not forming distinct nodules, but causing a diffuse cirrhosis of the lungs. There are no giant cells, and no caseous degeneration—a most remarkable point of difference, which makes it easy to distinguish the two affections, even without the demonstration of the bacilli. These latter are otherwise so like each other that it is only possible to make the differential diagnosis between the two diseases by the different mode of occurrence of the bacilli, the leper bacilli ever lying in clumps, while the tubercle bacilli are scattered through the tissue. Only on the walls of cavities can the tubercle bacilli be found in great numbers. More investigators claim to have found the giant cells in leprous growths. In the preparations some of these gentlemen have kindly sent me there have been no giant cells. In two cases the supposed cells were cross and oblique sections of blood-vessels, which, under a lower magnifying power, looked like giant cells, the nuclei of the endothelial cells resembling

* Bristol: John Wright & Co. London: Simpkin, Marshall, Hamilton, Kent & Co., Ltd.

those of a giant cell, and the contents of red blood corpuscles giving the impression of a granulated cell body; under the oil immersion lens, however, the contours of the red blood corpuscles could be distinctly seen filling the blood-vessel. In two other cases large globi had compressed the surrounding cells, so that the nuclei of these seemed to lie in the periphery of the globus, while they really were lying outside; and these nuclei, too, were situated parallel to the periphery of the globus, not perpendicular to it. In the thousands of leprous preparations I have examined I never saw a real giant cell, though I have seen multinuclear ones, which do not occur very often; in these cells the nuclei are irregularly scattered. I think it must now be regarded as certain that real giant cells and caseous degeneration never occur in leprous productions. It is most remarkable that the two bacilli which are so like each other as the tubercle and the lepra bacillus can be so different in their action on the tissues, but it remains, nevertheless, a fact. In leprous products there never, as far as I can judge, occurs any degeneration or necrosis of the tissues; the nodules soften in such a manner that the cells filled with bacilli grow larger, while the bacilli themselves are disintegrated into granules and so form the globi; the globi distend the meshes of the connective tissue still left, but there is no necrosis or degeneration of the connective tissue itself; this is found with its structure intact.

Professor Doutrelepont, of Bonn, last year described a case of leprosy of the lungs, which possesses the greatest interest from the fact that the Professor had diagnosed the disease from examination of the patient's sputum. In the same case the Professor found a leprous affection of the intestine. We have not yet personally succeeded in finding any leprous affection of the intestines, and I am always very cautious in accepting the correctness of new observations on leprosy which we are unable to verify here. But after the description Prof. Doutrelepont gives of his case, it is hardly possible to doubt the accuracy of his statement, that there really exists a leprous affection of the intestines. In earlier years I have seen very many cases o tuberculosis of the intestines in leprous patients, most of them before the lepra bacillus was known, and most probably I have overlooked the leprous affection that may have been present at the same time. Examination of intestines in later years also has never shown me any with leprous affection. But when the intestines can be attacked by leprosy, I am inclined to believe that they will be so in all or almost all cases of tubercular leprosy, and that it is from want of a sufficiently minute examination that we have not found the affection hitherto. It was so with the testicles, the affection of which I did not recognize

PLATE XX.

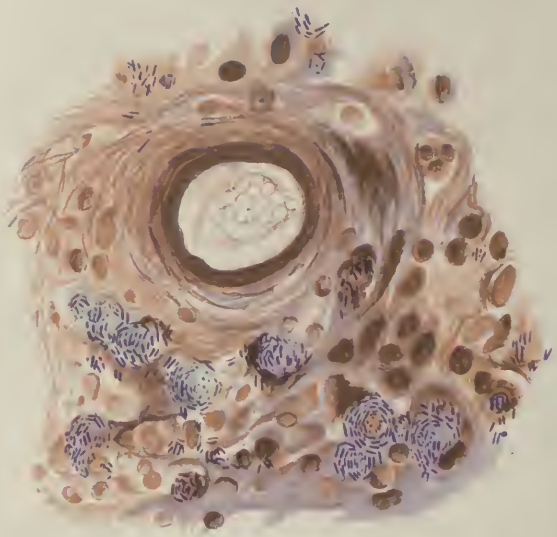

Fig A.

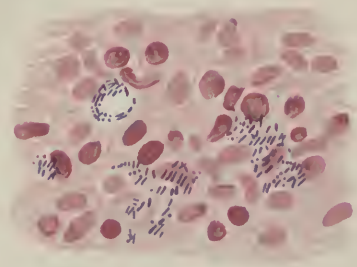

Fig B

until microscopical researches of the organs soon revealed to me the leprous testicles in all tubercular cases.

Besides the leprosy of the lungs, Dr. Lie has also found leprosy of the kidneys; the number of bacilli has in all cases been very small, and there have been very slight changes or none at all in the tissues around them, especially no proliferation of granulation cells, what everywhere else characterizes the leprous affections; the doubt still remains whether these few bacilli really produce the almost constantly present disease of the kidneys which sometimes appears as the large white kidney, sometimes as interstitial nephritis, and again as amyloid kidney. Possibly toxins produced by the bacilli may induce kidney disease; but as we are still without knowledge of the toxins of the lepra bacillus, the bacillus having not yet been cultivated, this is only a conjecture of very little value. These are the latest facts which the past year has brought us of the pathology of tubercular leprosy; my former contention that leprosy never attacked lungs, intestines, or kidneys, is thereby proved to be untenable; and it is consequently still more certain that leprosy is a disease infecting the whole organism. It shows, too, that the lepra bacillus must be a, so to say, tolerably innocent one, for the patients, in spite of carrying millions or milliards of bacilli, and having all their organs infected, can nevertheless live a tolerable life for years. It is scarcely correct, however, to speak of the infection of *all* organs, for in the muscles and in the central nervous system no bacilli have been found. Some authors have described bacilli in the spinal cord, but I trust more in Dr. Looft's researches, who never found them, but only a secondary degeneration of the posterior columns. The clinical symptoms speak, too, in favour of the central organs being primarily unaffected, there never being any symptoms of ataxia.

I add here two drawings *(Plate XX)* by Dr. Lie; the one from a leprous lung *(Fig. A)*, the other from a leprous kidney *(Fig. B)*.

A most interesting question was raised two years ago by Dr. Zambaco Pasha, of Constantinople, who maintains the view that leprosy still exists in France, where the cases have been described as *syringomyelia* and *maladie de Morvan*, and lately Dr. Zambaco, in "Bulletin de l'Académie de médecine," No. 29, 1896, has set forth the opinion that ainhum is nothing else but leprosy. Dr. Zambaco says he has seen many cases which cannot be anything but *lepra mutilans*, and which show the same symptoms as ainhum. He thinks further that there are many degenerate forms of *lepra mutilans* which one does not see in the hospitals, but only in the streets, nobody knowing that they are leprosy. As I have never seen a case of

syringomyelia nor of *ainhum*, I am unable to give a precise opinion on this matter. I can only say that on my many travels in Norway for inspection of the lepers I have never met with cases which could be confounded with syringomyelia or ainhum, as far as I know these diseases from description. I have only once seen a case in which there could be doubt. The hands were partly insensible, the fingers were curved, and on the dorsal side were ulcerations at the joints; the skin was very dry and almost brittle. The muscles were not atrophied, and this I consider a certain proof that the disease was not leprosy. The feet also were unaffected, which is never the case in leprosy, when the hands show so advanced a stage of the disease, as in this case. Having never met with the degenerate forms of leprosy, mentioned by Dr. Zambaco, here in Norway, and knowing from foreign physicians who have seen leprosy in different parts of the world that the forms of the disease are precisely the same elsewhere as here, I hesitate to endorse Dr. Zambaco's conclusions, though I, of course, cannot be positive, not having myself seen the cases; yet I allow that Dr. Zambaco having studied leprosy for many years, and being well acquainted with the disease, his opinion is entitled to weight.

The case mentioned above is one which Dr. Zambaco probably would say was leprosy, while I can only say that in my opinion it is not, without being, however, able to give a name to it.

Probably a leprologist will examine some of the so-called lepers in France next year, and it will be very interesting to see another opinion on the matter besides that of Dr. Zambaco. Our experiences in Norway fail to show the existence of a special and independent *lepra mutilans* with only nerve affections and their consequences, or of leprosy without skin affection. In Dr. Zambaco's opinion there exist many cases of what he calls *lépre fruste*, or degenerate leprosy, in which only one or some fingers or toes are attacked. As already mentioned, I never saw such cases, but of course am unable to deny their existence simply for this reason. It is merely my opinion as against Dr. Zambaco's.

I confess, moreover, that I have little belief in the so-called degeneration of infectious diseases; one case may be milder than another, but yet maintain its specific character, and I do not know that any disease in the course of centuries has lost its specificness. It seems as if syphilis has lost something of its virulence, though we sometimes now-a-days see very destructive cases, but syphilis has hardly lost anything of its characteristic clinical characters. If the poison may be mitigated, it has hardly lost its specificness; it always infects the whole organism, never a certain part only. It may be that leprosy, too, loses

something of its virulence. I very seldom now see such bad cases as were common nearly thirty years ago, but I also saw then quite as mild cases as now. What may be the reason I am unable to determine ; perhaps it is dependent upon greater care being taken by the patients themselves. But what is of great weight in my opinion, there is no essential difference in the symptoms of the disease. If the degeneration of leprosy depends on the age of the disease, there ought to be *lépre fruste* in Norway too, for the disease is, of course, quite as old here as elsewhere, having descended from the same oriental leprosy. If leprosy were degenerating at all, it should be quite as much degenerated here as elsewhere, and we ought to find the same degenerated forms as Dr. Zambaco finds in Constantinople, but this is not so. One could say, perhaps the lepra bacillus has gained in virulence by being inoculated into the Norwegian people, and therefore still has many years left to degenerate completely. In that case I hope, nay I am certain, that Norway will get rid of leprosy before the bacillus has time to degenerate completely, and we will in consequence learn nothing on this point in Norway. I prefer this situation to making further speculations on the mitigation or degeneration of the bacillus ; but I must add that the lepra bacillus might be expected to have gained in virulence among the other European nations as well as in Norway. Hence, one would like to know the reason for the alleged mitigation elsewhere in Europe?

Though I cannot, as already remarked, decide this question in the absence of observations, I imagine that the forms of *lépre fruste* which Dr. Zambaco mentions are probably other nervous affections, and that I find it too sweeping to classify all or almost all atrophies or losses of sensibility as leprosy. I can very well conceive that other affections of the nerves may result in the same or like affections as leprosy, and in general I think it wiser rather to differentiate than to put different affections in the same category. I have myself once seen a section of the ulnar nerve result in the curving of the fingers, and atrophy of the hypothenar, and the hand might well have been mistaken for a leper's hand.

I therefore leave this matter unsettled, and here present the photographs by Röntgen's rays of a leper's hand (*Plate XXI*) and foot (*Plate XXII*). These photographs show the atrophy of the bones. The atrophy is, of course, dependent on the destruction of the peripheral nerves, and no other cause, for the atrophy having been discovered, it shows tolerably clearly that there must exist trophic nerves. As to the hand, the fingers being curved, it is not possible to let the hand lie flat on the plate. In consequence, the metacarpal bones give too

large a shadow; the phalanges are less shadowed, though clearly atrophied. As regards the foot, the atrophy of the metatarsal bones and of the phalanges of the toes is very prominent.

Hitherto it has been impossible to disentangle the riddles of the anæsthesia and atrophy in the maculo-anæsthetic form of the disease. While the skin is quite without sensibility, the patients still feel in the periosteum and the bones. This we very often prove in operating for necrosis of the bones; such operations can be made without chloroform; the patients do not notice the cutting of the skin, but always feel the scraping off of the periosteum and the section of the bones; sometimes they indicate pain too. Possibly any feeling suggests pain to the patient; but sometimes it is indicated by patients who are not at all nervous. Now in very atrophic nerves some nerve tubes are still found apparently intact. The muscles are paretic, but never completely paralytic; the patients move their curved fingers and keep the feeling of their movements, for they can do tolerably fine work in knitting, sewing, and wood-carving. The paresis is evidently only dependent on the atrophy of the muscles; and it must be regarded as most remarkable that the few nerve tubes left intact are just the motor and sensitive fibres of the muscles and the sensitive fibres of the bones. My researches on this point are not yet complete, and it is to be hoped that further investigation may throw more light on these remarkable phenomena.

As a new treatment of the disease, Dr. Carrasquilla, of Bogota, has proposed a serum treatment. He thinks that the natural immunity of animals can be added to by injecting blood of lepers into their veins; he assumes that the lepra bacilli can be cultivated in the blood current of animals, and in that way produce an antitoxin. This assumption is scarcely well founded. As yet no animal has been made leprous, and one would rather suppose that the bacilli would die in the blood of animals. Moreover, a leper's blood, so far as we know, very rarely contains bacilli. It may be supposed that the blood does so under an eruption of new nodules, but we do not know if it is so. We find bacilli in the endothelial cells of blood-vessels, and I have found them in white blood corpuscles in blood-vessels. Once we found them free in the blood of a patient treated with Koch's tuberculin, and so did Prof. Doutrelepont; but generally we do not find them in the blood. Further, it is not certain that the blood of a leper is antitoxic or bactericide; one might rather believe it is neither, for lepers can ever get new eruptions, and thus do not seem to have acquired immunity. I cannot therefore see that the method of Dr. Carrasquilla is rational. The treatment has, too, as far as I know, been of no use. Until we

succeed in cultivating the lepra bacillus, I fear we shall try in vain to find a healing serum.

But though we cannot cure leprosy, we can prevent it by isolation of the patients; true, this costs money, yet the money is well applied. Take as an instance Norway, for which I append the following budget: From 1856 to 1890 we spent about £350,000 on preventive measures. In the five years, 1856 to 1860, there were one thousand one hundred and forty-eight new cases of leprosy, and, as far as we know, there were about the same number in the five years, 1850 to 1855. Had nothing been done to check the disease it is tolerably certain that leprosy would not have decreased. We ought then in the following years to have had as many new cases as before, that is to say, between 1861 and 1890, six thousand eight hnndred and eighty-eight new cases. In reality there have been only three thousand six hundred and ninety-six; and thus three thousand one hundred and ninety-two have been saved from leprosy.

When I now value the life of a man at only about £500, which must be conceded to be a low estimate, and from the above figures subtract the half, because many women and children also have been saved, Norway has on these saved human beings gained more than £800,000. Can invested capital anywhere produce such good dividends? With such figures to encourage them no people can say that they are too poor to do anything to prevent leprosy.

P. G. Unna, M.D., Hamburg.
Norman Walker, M.D., Edinburgh.

Dr. Everard Todd,[1] Medical Officer on Robben Island, has a note on the influence of acute specific disease upon leprosy. With erysipelas, seven patients died, 36 per cent. were worse, and in 64 per cent. there was no improvement. With measles, 12½ per cent. were worse, sixty-eight were unchanged, and there was temporary improvement in 12½ per cent.

Crocker[2] describes two cases of leprosy, treated by the subcutaneous injection of **Perchloride of Mercury**, $\frac{1}{5}$ of a grain. The improvement was remarkable. In the second case, which was shown at the Dermatological Congress, in London, the patient's condition was, compared with the photographs of the previous state, most satisfactory. Still Crocker wisely claims to have done nothing more than establish a strong *primâ facie* case for the further trial of mercurial injections.

Carrasquilla[3] has treated nerve leprosy by the use of **Antileprous Serum.** He has also tried it in three cases of the tuberculous form. Each injection produces hypersecretion from the skin and mucous

membranes. The nodules are sometimes absorbed, sometimes softened, and cicatrised. He has treated in all fifteen cases, apparently all with success. In one case, sensibility returned in an anæsthetic patch. The mental improvement too was marked.

REFERENCES.—[1] "Brit. Med. Journ.," June 20, 1896; [2] "Lancet," August 8, 1896; [3] "Semaine méd.," Jan., 1896.

LEPROSY IN AUSTRALIA. *David Hardie, M.D., Brisbane.*

Up to the present time forty-four cases of leprosy have been notified in Queensland. From a report supplied by Dr. Love, Secretary of the Central Board of Health, these may be classified according to nationality as follows: Chinese, thirteen; South Sea islanders, fifteen; other coloured races, eight; Europeans, eight, total, forty-four. Thus showing, that of cases reported in this colony, there have been eight Europeans against thirty-six amongst the various coloured races.

Of these forty-four cases twenty have died, thus leaving twenty-four alive at the present time, of whom seven are Europeans and seventeen coloured races.

The difference here is greatly intensified, when it is remembered that there are only seventeen thousand coloured people in the colony, while the white or European population amounts to four hundred thousand.

According then to the standard of population, we find that at this date leprosy exists in the proportion of 1 in 57,000 Europeans; 1 in 1,000 coloured races. Furthermore, the disease first appeared in the colony amongst the Chinese, and continued to be reported in these and other coloured races for several years prior to its first appearance in Europeans. These facts would almost conclusively show that leprosy has been imported by alien races, and more especially by Chinese, into Queensland.

Segregation is strictly enforced. There are two lazarettes—one on Friday Island for coloured races, and one at Dunwich, mainly for Europeans.

LEUCORRHŒA. *Theophilus Parvin, M.D., Philadelphia.*

Mish[1] says: A leucorrhœa, inodorous, or of mild odour, persisting during the climacteric, accompanied by increasing hæmorrhage, is suspicious, and demands investigation.

If profuse, of peculiarly fœtid odour, grumous, excoriating, appearing early or late during the climacteric, with profuse hæmorrhage, it is reasonable evidence of cancer of the cervix.

When moderate in amount, ill-smelling—the peculiarly fœtid odour of cancer of the cervix being absent,—accompanied by hæmorrhage, it suggests cancer of the uterine body.

Accompanied with hæmorrhage, containing material like the washings of meat, it is said to indicate sarcoma.

A watery discharge, as a rule, occurring during menstruation, odourless, or of little odour, persisting, accompanied by profuse hæmorrhage, indicates fibroids; with little or no hæmorrhage, polypi.

Profuse bloody discharges coming on gradually, with declining menstruation, ceasing usually with the menstrual flow, point to fibroids.

Persistent profuse discharges of blood occurring spontaneously, arising from sudden exercise or coition, occurring, as a rule, after the menopause, indicate cancer.

In the "New York Medical Record," (March 21, 1896), treatment by **Creolin** and **Hydrastin** is recommended for this condition.[2]

℞ Creolin gtt. xxx | Ext. Hydrast. f℥ijss

M. Sig.—Two teaspoonfuls in a pint of warm water, to be used for one vaginal injection.

Another vaginal injection[3] is:—

℞ Alum	1 drachm	Permanganate of Potassium,	1 grain
Sulphate of Zinc	1 drachm	Heliotropin	1 grain

The powder to be dissolved in a pint of warm water and used as a vaginal douche.

REFERENCES.—[1] "Pacific Med. Journ."; [2] "Med. Press and Circ.," Feb. 5, 1896; [3] Ibid.

LEUKÆMIA.

Synopsis.—(Vol. 1896, p. 28.) Rummo advises hypodermic use of **Soda Arsenite Solution**, 2 grains—℥j, beginning with $\frac{1}{27}$-grain dose, and gradually increased.

LEUKOPLAKIA.

Synopsis.—(Vol. 1896, p. 415.) Pencilling with **Potassium Iodide Solution, 20%**. Leishkow uses: ℞ Terræ Silicæ, grains 22½; Resorcin, grains 45; Adipis, ℥j. M. Ft. pasta. Apply frequently in the day. Hyperæmia produced by the paste is subdued by **Balsam of Peru** locally. Forbid smoking and condiments, and prescribe **Boric Acid Mouthwash.**

LICHEN PLANUS.

Synopsis.—(Vol. 1896, p. 416.) **Arsenic** can be used early; some prefer **Antimony. Tar** or **Carbolic Acid** or **Sublimate** may be used externally.

LICHEN SCROFULOSORUM.

P. G. Unna, M.D., Hamburg.
Norman Walker, M.D., Edinburgh.

Mr. Jackson Clarke[1] showed to the Pathological Society, sections from a typical case. Most of the spots were flat-topped, like those of lichen planus. The patient improved under **Cod-liver Oil.**

REFERENCE.—[1] "Brit. Med. Journ.," Jan. 11, 1896.

LICHEN URTICATUS.

Synopsis.—(Vol. 1896, p. 417.) Antipyrin internally. Locally, 2% β-Naphthol Ointment.

LIVER (Acute Yellow Atrophy of). *David Hardie, M.D., Brisbane.*

Although this disease is extremely rare in Queensland, the writer had the unique experience of attending six cases, five of which occurred within the limited period of six months dating from June to December, 1889. The following is a summary made in concluding a paper on these cases before the Queensland Medical Society:—

(1,) *Age.*—All my cases occurred between the ages of twenty-one and twenty-eight.

(2,) *Sex.*—They have all been in married women in pregnancy. Out of thirty-three cases recorded by Frerichs twenty-two were females, and of these one-half were pregnant. Four of my cases miscarried before death.

(3,) *Season and Locality.*—Two appeared in June, one in November, two in December, and one in February. Four were in comfortable houses on elevated localities in various suburbs of the town, one lived on low swampy ground, and one in a crowded part of the town. It would be well to remember, that the rainfall in this district has been unusually high for the last twelve months, and that many parts of Brisbane have frequently been in a flooded condition.

(4,) Acute atrophy of the liver is not the cause of the disease, but is merely a local manifestation of a generally morbid tissue metabolism. The disease might as correctly be called acute atrophy of the spleen, for this organ, in the three cases I carefully examined, was but half its ordinary size and weight.

(5,) The prevalence of this disease in pregnancy, with its altered condition of blood and marked susceptibility to nervous influences, tend to the belief that those two factors are at the root of this condition that results in acute atrophy of the liver and spleen. In one case it was purely traced to shock to the nervous system, and in the absence of this, is it possible that the great fear and anxiety with which some married women, especially in this hot climate, look forward to the birth of another child, may supply us with the usual exciting cause?

(6,) Through this aberration of the nervous system in a vitiated state of the blood, the nutrition of the various organs is affected, and their physiological activity retarded. The hepatic, splenic and renal cells, and probably the cells of other organs and tissues, are altered, undergo fatty degeneration, and the organs or tissue atrophy. In consequence of this, tissue and blood metamorphosis is interfered

with, the albuminoids are not completely oxidized into the more soluble products, urea and uric acid, and the less oxidized bodies—leucin, tyrosin, and xanthin—take their place.

(7,) The blood also undergoes changes. Examined under the microscope it is seen that the plasma is full of minute granules, that the red corpuscles lose their regular outline, and are more or less shrivelled up and granular in appearance. The white corpuscles also are very irregular in shape, and their cell wall in many cases is incomplete. Whether these changes appear antecedent to or are dependent on the structural and physiological changes in the various organs, I do not know. They evidently indicate abnormal and deficient evolution and dissolution of the corpuscles of the blood.

(8,) The cerebral symptoms observed later on in the disease are not caused by bile poisoning, for in the worst and most rapid cases the jaundice is least intense. The suddenness of their onset is suggestive of some rapidly-developed poison, such as ptomaines, absorbed into the system, through the inability of the atrophied and disorganized liver to destroy them, or leucomaines generated in the blood through "abnormal metabolism of albuminous matters."

(9,) Acute atrophy of the liver might, with more significance, be designated "acute fatty degeneration of the liver."

All these cases died in from twenty-four hours to ten days after urgent symptoms set in, there being in some of them a doubtful history of jaundice for a week or two previously.

Treatment was of no avail.

LIVER (Surgery of). *A. W. Mayo Robson, F.R.C.S.*

"*Hepatopexy*" *for Floating Liver.*—E. Areilza[1] reports the case of a lad of twenty, who came to him in 1890, complaining of symptoms which made life a burden to him. Every two or three months he had attacks, commencing with a feeling of cold all over the body, followed by pain, vomiting, prostration, and loss of consciousness. These attacks incapacitated him for four or five days, and on leaving his bed he was as weak as if he had been through a serious illness. It could not be ascertained whether the attacks were accompanied by rise of temperature or jaundice. The patient had been subject to these from his earliest infancy. Physical examination revealed an enormous tumour in the right hypochondrium, extending three fingers' breadth below the ribs, filling up the greater part of the umbilical region and reaching to the left hypochondrium. A diagnosis of hydatid cyst was made, and abdominal section was performed, with a view to operative treatment of the tumour. On opening the peritoneum, however, the liver, which presented in the wound, was found to be perfectly normal,

but lying low down in the abdomen, and very movable. It was attached by four silk stitches to the belly wall, the surface being touched here and there with the thermo-cautery. The patient made an excellent recovery, and left the hospital a fortnight after the operation. He came to Areilza five years later for a certificate, and informed him that since the operation he had had no further attacks, and had been perfectly well. His appearance was robust, and he was able to do hard mechanical work without trouble. The liver was found to have kept the position in which it was sutured.

The Treatment of Hydatid Cyst of the Liver by Injection.—Minossi[2] reports the case of a girl, aged seventeen, suffering from hydatid cyst of the liver, cured by the injection of **Corrosive Sublimate Solution.** About 4 c.cm. of the cystic fluid were withdrawn, and then 8 c.cm. of a solution of corrosive sublimate, holding 8 cg. of the salt were injected into the cyst. Violent symptoms of the sublimate poisoning set in (collapse, vomiting, headache, epigastric pain, intense thirst, bloody vomit, and diarrhœa), and lasted some twenty-four hours. The cyst, however, rapidly diminished in size, and after eight days an indistinct cord between the right hypochondrium and the umbilicus was all that could be felt. The corrosive poisoning was possibly an idiosyncrasy, for a simple sublimate dressing had previously set up stomatitis.

Pantaloni[3] reports an interesting case of hydatid cyst of the right lobe of the liver, situated postero-inferiorly. The cyst was incised and partially excised by a median laparotomy, the patient recovering.

The author draws the following conclusions from his observation of this case: (1,) In cases of hydatid cyst of the postero-inferior portion of the right lobe of the liver, non-suppurating, a rare form, a successful operation may be performed by a laparotomy through the anterior abdominal wall; (2,) The median laparotomy permits not only the easy incision and complete emptying of the cyst, but also the resection of a greater or less portion of the cyst-wall; (3,) If the patient is made to sit up in bed at as early a date as possible, in operation by this method, and remain in this position as much of the day as possible, sufficient drainage will be obtained without the necessity of a lumbar incision.

Relation of Gall-stones to Cancer of Liver.—Mr. C. Bendles[4] read a paper on this subject at a meeting of the Pathological Society, in which he brought forward statistics to show that primary carcinoma of the liver was usually dependent on gall-stones, in this differing widely from secondary carcinoma where gall-stones were rarely found. The facts strongly supported the irritation theory of cancer.

REFERENCES.—[1] "Rev. de Med. y Cirugia Practicas," July 5, 1896, and "Brit. Med. Journ." Epitome; [2] "Il Policlinico," July 15, 1896, and "Brit. Med. Journ."; [3] "Arch. Prov. de Chir.," June, 1895, and "Amer. Journ. Med. Sci.," March, 1896; [4] "Lancet," Nov. 9, 1895.

LOCOMOTOR ATAXIA. *Græme M. Hammond, M.D., New York.*

Bechterew[1] has been using **Cerium Oxalate** for the relief of the gastric crises of this disease. The attacks of vomiting were greatly reduced in number, while the actual act of vomiting became easier, and the pain, thirst, and nausea were diminished to a great extent. The psychic conditions also improved, restlessness subsided, and sleep returned. Micturition is said to have become slightly more difficult, but not enough to require the use of a catheter. The most important improvement, however, was that food could be retained, owing to the diminished number of paroxysms of vomiting.

REFERENCE.—[1] "Lancet," Aug. 22, 1896.

Synopsis.—(Vol. 1896, p. 418.) **Senna** arrested and eventually relieved the incontinence of urine in several cases.

LUMBAGO.

Synopsis.—(Vol. 1896, p. 55.) **Glycero-phosphates** are recommended in chronic forms.

LUNG (Surgery of). *Priestley Leech, M.D., F.R.C.S.*

This formed one of the subjects for discussion at the French Surgical Congress in October, 1895.

M. Reclus[1] in the opening paper divided pulmonary affections which may call for surgical interference into the following groups: (1,) Hæmorrhages; (2,) Tumours; (3,) Cavities.

Surgical interference in cases of traumatic hæmorrhage have been rare; Amboni and Delorme operated on two cases, but both died. In cases where the hæmorrhage persists in spite of rest, immobility, and closure of the wound, and fatal syncope is threatened, or the accumulation of blood in the pleura threatens to paralyze the heart or lung, a large opening should be made in the thoracic wall, the wound exposed, and an attempt made to stop the hæmorrhage by ligature, or plugging with iodoform gauze.

In cases of tumour, including tubercle, the benefit to be derived from surgical interference is very remote. Six cases of tubercle at the apices have been operated on, and only two recovered. As a cure or arrest by ordinary medical means may often be looked for in these cases surgical interference is not justified; and where the disease has spread beyond the apices, the proceeding is still more dangerous and less justifiable.

In cases of cancer of the lung, surgical interference is only justified where the cancer has spread from the thoracic wall, and has only involved a limited portion of pulmonary tissue. Krönlein and Müller have each had a successful case, and Weinlechne an unsuccessful one.

In the third class of cases viz : cavities in the lung, surgery offers a somewhat better prospect. This group includes tuberculous cavities, dilatations of bronchi, gangrene of the lung, abcesses, and hydatid cysts :—

(1,) In tuberculous cavities, surgical interference should be the exception, if incision and drainage of such a cavity lead to some amelioration, the original disease persists and the interference itself may prove fatal. Out of a hundred cases operated on, five died immediately ; seventy only lived two weeks ; and fifteen lived less than four weeks ; and ten alone benefited by pneumonotomy, and they were not cured.

(2,) In bronchiectases, the results have not been much better, for as a rule there is more than one cavity, and if one is drained, septic absorption goes on from the others.

(3,) In hydatid cysts operation is of great benefit, and is to be recommended. If left to themselves, two thirds of the cases die. Lopez' statistics give thirty-two operations with five deaths and twenty-seven cures. M. Reclus from a list of eleven operations, found nine cures and two deaths.

(4,) Pulmonary gangrene also is immensely benefited by surgical treatment. If left to themselves, these cases have a death rate of 75 per cent. Fabricant published a list of twenty-six cases with sixteen recoveries and ten deaths ; Täufert in ten cases had seven recoveries and three deaths, and Reclus has collected details of thirteen cases with eleven recoveries and two deaths, where operation had been performed. Every case of pulmonary gangrene is however not suitable for operation ; diffuse gangrene should not be operated on, but only cases where the gangrene is circumscribed, and even where the gangrene is limited, if the patient is young, the general state good and no signs of septicæmia are present, abstention is better.

In cases of large gangrenous cavities at the base of the lung, operation must be undertaken.

As regards the method of operating, Reclus recommends a sufficiently large incision of the soft parts, so that easy access to the ribs is obtained. If the two layers of the pleura are adherent, the operation can be proceeded with straight away. Should the two layers be non-adherent, two lines of practice may be pursued. If delay in opening the cavity is dangerous, the lung must be seized, and the

parietal and visceral layers of the pleura sewn together by closely placed separate ligatures. If there is no immediate necessity to open the cavity, the parietal layer of the pleura is opened, and a plug of iodoform gauze is introduced, and left for five days or so, until adhesions between the two layers has taken place. In any case the site of the cavity is first determined by exploratory puncture; when the site is thus found the needle is left in place as a guide. He considers the blade of the thermo-cautery heated to a dull red as the best instrument for opening the cavity. Hæmorrhage in feeble persons is thus avoided. No injection of the cavity should be attempted.

Prof. John Parmenter[2] has an instructive paper on contusion of the lungs without wounds of the chest walls or fracture of the ribs. Every organ—the heart, the pericardium, the aorta, and œsophagus—have been injured by apparently trivial blows upon the chest, and the lungs do not escape. The elasticity of the chest walls permits a considerable recurve and rebound without permanent injury. The elastic lung would also escape, if, as Gosselin pointed out, a person about to be hit did not instinctively close his glottis, and prevent the escape of air under the impulse of the blow, and make the lung for the time being a solid body.

Jobert distinguished three degrees of bruises: (1,) The capillaries only are ruptured; the pulmonary tissue is not torn; (2,) The alveoli, bronchioles, and vessels are torn, and blood deposits are scattered here and there through the lung; (3,) The bronchi and large vessels are torn. Bruises of the first and second degree are usually recovered from, but patients often die rapidly from those of the third. Certain complications - chief among which are hæmothorax, pneumothorax, and emphysema—are common in severe contusions of the lung.

The symptoms in a severe case are those of shock, and collapse with dyspnœa and profuse hæmoptysis. There are sonorous râles, absence of vesicular murmur, with amphoric breathing and metallic tinkling. Various complications may occur in a severe case, *e.g.*, broncho-pneumonia, traumatic pneumonia, gangrene, pleurisy. Recovery follows if the lesions remain aseptic, and are not too extensive.

As regards treatment, **Morphia** acts well for the pain and dyspnœa. Auto-transfusion by elevating and bandaging the patient's limbs may be employed for the hæmorrhage; if this with absolute rest in the recumbent position does not relieve the breathing, and the dyspnœa and cardiac embarrassment increase, with the strictest antiseptic precautions, enough blood may be removed by means of a medium sized

trocar to diminish the pressure. If the cannula becomes blocked with clotted blood, as is often the case, we must operate as for empyema, and turn the clots out. Unfortunately, this frequently starts up the hæmorrhage again, and is only to be resorted to, when the patient's life is in imminent danger. Pneumothorax can be relieved by paracentesis. Emphysema requires long and deep incisions into the swollen area followed by judicious pressure.

M. Tuffier[3] in a case of gangrene of the lung, strips off the parietal pleura from the thoracic wall. The steps of the operation are as follows: The patient, a man sixty years old with gangrene of the middle lobe of the right lung, was placed on the left side with a cushion under the flank; an incision 10 c.m. (4 inches) long was made in the eighth right intercostal space, where the lesion had been localised by the clinical signs. The intercostal muscles were then cut, and the parietal layer of the pleura was laid bare the whole length of the incision, and freed from the fibres of the intercostals, which appeared to be inserted into it. The lung was seen to move naturally under this pleural layer, and presented its usual colour. The parietal layer of the pleura was then stripped from the inferior border of the eighth rib, from its internal surface, and from its superior border; 5 c.m. (2 inches) of the eighth rib were then excised to give more room, and the parietal layer stripped off to an extent equal to the size of the hand. During this time, the lung was easily explored; between the fingers it was soft, supple, and presented no inequality of consistence, but in continuing upwards this pleuro-parietal separation, he suddenly came upon a hard portion of lung, different from the rest. M. Tuffier concluded this was the seat of the disease; 7 c.m. more of the upper and posterior part of the eighth rib were removed, aud the hard part was thus isolated. It was yellowish in colour, and the two layers of pleura were adherent over its surface.

The rest of the wound was covered with iodoform gauze, and the hard portion was incised, and a cavity the size of an orange was opened, giving exit to some brownish pus, numerous clots, and fragments of pulmonary tissue. The cavity was filled with iodoform gauze, a piece of which was placed in the separated sub-pleural space, and the rest of the wound was closed. The most difficult part of the separation of the parietal pleura is at the borders of the ribs, and at this point care must be taken.

REFERENCES.—[1]"Rev. de Chirurgie," Nov. 1895; [2]"Buffalo Med. Journ.," Oct. 1895, also quoted in "Therap. Gaz.," Jan. 15, 1896, and "Internat. Journ. of Surg.," Nov. 1895; [3]"Gaz. des. hôpitaux," No. 135, 1895, and "Rev. de chirurgie," p. 1033, 1895.

LUPUS. *P. G. Unna, M.D., Hamburg.*

Local Treatment of Lupus.—In the last ten years, especially in England, the preparations of antimony have found considerable employment, chiefly in the internal treatment of skin diseases I wish to draw attention to a preparation of antimony which was more used in the first half of this century for external treatment, namely, the **Chloride of Antimony** ($Sb Cl_3$). This is a colourless, soft, crystalline mass, a powerful caustic, which fumes on exposure to the air, and, when dissolved in a small amount of water, forms the officinal liquor antimonii chloridi. On the further addition of water there is a voluminous precipitate with the separation of hydrochloric acid ; this precipitate is the oxychloride of antimony (Sb OCl) which is therapeutically inert.

All the metallic chlorides (especially the chlorides of mercury and zinc) seem to have a destructive influence on the tubercle bacillus, and are available for the treatment of lupus. But my recent experience leads me to believe that the chloride of antimony is superior to any other. I apply it in two different forms.

Firstly, as a superficial caustic. According to my previous experience, the best superficial caustic in lupus was that composed of a mixture of 1 part of salicylic acid, and 2 parts of creasote, which worked most actively in the form of the salicylate creasote plaster. No other preparation known to me causes such a clean excavation of the lupus nodule. No other permits of such rapidly growing, good granulations, and no other is followed by such fine, smooth scars. The fact is mainly due to the salicylic acid, which, however, is very painful during the whole of its application. Creasote, in addition to its effect on the bacillus, has the valuable property of arresting the pain of the salicylic acid within a quarter of an hour. This mixture was in most cases an almost ideal remedy, so long as the part did not skin over too soon, before the deep-lying nodules had had time to ulcerate. It was therefore necessary in all deep cases to apply from time to time to the individual nodules, a caustic, such as one of the chlorides, applied on pointed wood in the method which I described seven years ago.[1] The difficulties of this very valuable method I sought to overcome by adding to the salicylic and creasote one or other of the chlorides. But both sublimate and chloride of zinc in the necessary strength prevent the fine division of the salicylic ; and further, they affect the sound epidermis in the neighbourhood of the nodules, a thing which must be avoided. In this connection the use of the chloride of antimony was an advance. Naturally this most painful addition requires a further anodyne, and since it was not possible to increase the

proportion of creasote, I added the extract of cannabis indica which, from previous experience, I knew to be very valuable. These four necessary ingredients, salicylic acid, liquor antimon. chlor., creasote, and cannabis indica, may be combined into a somewhat complicated, but most useful plaster. For ordinary use, however, I prefer to order them in the form of a concentrated ointment:—

℞ Acidi Salicylici	1·0	Creasoti Fagi	2·0
Liquor. Antimon. Chlorati	1·0	Vaselini	5·0
Extract. Cannabis	1·0	Adipis Lanæ	10·0

This is applied to all the nodules with a rod, and then the whole lupus region covered with zinc oxide plaster. This covering has the triple advantage that it fixes all the little applications, intensifies the action of the ointment by the impermeable covering, and protects the surroundings by the zinc oxide. In older cases with scattered nodules, and in very deep forms of lupus, the ointment must be still further strengthened :—

℞ Acidi Salicylici		Creasoti Fagi	āā 2·0
Liquor Antimon. Chlorati		Vaselini	2·0
Extract. Cannabis		Adipis Lanæ	10·0

After some weeks of this treatment (the bandage being changed every day or every second day, according to the amount of suppuration), the nodules being first ulcerated, and then once more skinning over, healing with a very perfect surface takes place, often without any further treatment. One can, of course, in obstinate cases, when the bandage is changed, apply the liquor antimon. chlor. to the doubtful spots, these having previously been touched with cocaine.

In very scattered nodules one may use this remedy in my "Spickmethode" instead of the sublimate. The caustic effect is much more severe, and the results are apparently correspondingly good. Well-pointed wooden matches are dipped in the chloride of antimon., bored into the nodules, then cut off in the neighbourhood of the skin, and the part covered with zinc oxide, or mercury carbolic plaster. The scab which is thrown off is much deeper and broader than when sublimate is used. The healing also is slower, but the result is more sure, and the scars quite as good as when one allows the healing to take place under salicylic creasote plaster muslin. Here, as in every "Spickmethode," one can utilise the stage in which a deep, broad hole represents the pre-existent lupus nodule, for the application of drugs in the form of caustic pencils, fluids, and powders; but since the application of this preparation, I have not found any of these necessary. The prolongation of the action of liquor antimon. chlor. in comparison

with sublimate appears to depend on the relatively high concentration of the fluid, which can never be reached by a watery solution of sublimate.

REFERENCE.—[1] "Monatsh. für prakt. Dermat.," vol. viii, p. 529.

P. G. Unna, M.D., Hamburg.
Norman Walker, M.D., Edinburgh.

M. Hallopeau showed to the French Dermatological Society a case of lupus, which had been cured by an attack of **Erysipelas**, and had remained well for six years. M. Babes showed a similar case at a previous meeting. M. Hallopeau thought it was worth while considering the inoculation of erysipelas. M. Besnier thought that until we could control the disease better, it would be unwise. M. Wickham referred to the elephantiasis which might follow repeated attacks of erysipelas. M. Fournier regarded erysipelas as an agent of inhibition.

Lundi[1] reports the case of a man aged sixty with labio-nasal lupus, of twelve months' duration. Two hypodermic injections of ½ per cent. **Sublimate Solution** were made in the neighbourhood. The first injection was followed by no reaction, but a second, three days after, was followed by great swelling and redness lasting two days. A week later, two injections of a 1 per cent. solution were given, and caused intense local reaction, lasting three days. A week later, two more; local reactions less marked, and the ulcers began to cicatrise. In another week the nasal ulcers had completely cicatrised, and in a fortnight the whole area was cured. No severe pain was complained of by the patient.

Marson[2] reports a case cured in seven weeks by **Thyroid Tabloids.** Brooke points out the difficulty of saying that any case is cured, and the importance of examining the mucous membranes.

Brocq recommends **Iodoform.** Elsenberg[3] washes the ulcers, and, then applies ointment of **Lanolin, Vaselin, Amidon**, and **Parachlorphenol**. It is applied every other day, alternating with an iodoform ointment. He says the effects are good, but there is considerable pain.

Hann[4] was successful in apparently healing lupus, in two cases on the face, by **Electrolysis** of the nodules. (This method, which seems so hopeful, has in my hands been most disappointing. N.W.)

Richmond of Washington has used a combination of **Pyrogallol** and **Aristol** for lupus vulgaris, in the following form: Pyrogallol, ·6, aristol, 1·2, lanolin, vaselin, of each 15.

In the "Medical Age," (Dec. 1895,) there is a reference to a method which has been resuscitated, and which is of interest at the present time. It is the destruction of the nodules by concentrating the rays of

the sun under a lens. It is said to be employed with considerable success by the Orientals, but is distinctly painful.

Tessili[5] reports two cases successfully treated by **Maragliano's Serum.** Alternate doses of 1 to 5 c.cm. were injected, and externally the part was painted with the serum. He reports most satisfactory results.

REFERENCES.—[1] "Rif. med.," Feb. 22, 1896 ; [2] "Brit. Med. Journ.," March 21, 1896 ; [3] "Rev. de therap. méd. de chir.," 1895 ; [4] "Munch. med. Woch.," r896, No. 12 ; [5] "Rif. med.," July 29, 1896.

LUPUS ERYTHEMATOSUS. *P. G. Unna, M.D., Hamburg.*
Norman Walker, M.D., Edinburgh.

In a short clinical lecture given at the end of July in the Edinburgh Royal Infirmary, by Dr. Unna, he referred to the importance of treating this condition by mild rather than by irritating preparations. He compared the condition of the skin with that of a bog, having a fair surface, but rotten beneath. He mentioned that **Pyrogallic Acid** after being oxidised, acted fairly well, with comparatively little irritation ; but on general principles he warned against the use of ointments.

Internally, Bulkley is a great advocate of the use of **Phosphorus.**

MALARIA. *James Cantlie, F.R.C.S.*

The malarial parasites have provoked much discussion during the year 1896. The attention given to these parasites has, however, not by any means exceeded the interest and importance attaching to the subject. It may be claimed that our methods of investigation could become more exact, and that our knowledge is reducing the field of enquiry to scientific limits. In fact, the position of affairs is such that the medical practitioner in malarial districts can no more neglect the use of the microscope in the treatment of fevers, than can the physician omit the use of the stethoscope in the diagnosis of diseases of the chest. The matter has gone beyond the stage of empiricism, and it would seem that at last the numerous tropical fevers are to be classified and dealt with in a manner worthy of modern science.

The present state of belief is shortly as follows : That malarial fevers are produced by a hæmatozoön of which there exist several varieties, or it may be even distinct species. Within the body the parasite seeks shelter in the red corpuscles of the blood, and there proceeds to sporulation, or to the formation of a crescent shaped body.

Development by sporulation advances at the expense of the cor-

puscle, and the naked spores are set free in the blood. Soon becoming adherent to a fresh corpuscle they sink into its substance, there to undergo a further and similar cycle of development. The growing parasite shows certain intra-corporeal changes of a definite type—the protoplasm of its substance as well as the contained nucleus segment—with the result that each division or sporule possesses a nuclear element in the midst of a covering of protoplasm. As might be expected, the parasite produces or induces radical changes in the anatomy and economy of the red corpuscle it infests. Hæmoglobin is disintegrated, and one of the products of its digestion by the parasite (melanin) so behaves that its characters are made available as an aid in classification. Beyond this stage of our knowledge of the parasite we come to the region of present investigation, experiment and speculation. To all intents and purposes the enquiry is proceeding along scientific lines, and the array of observers is imposing. Shortly, the investigations at present in hand are one or other of the following:—

Quotidian Fevers.—A special form of parasite belongs to this class of fevers, a twenty-four hour cycle being the period of its maturation or expression. It is an observation with which most tropical practitioners are conversant, that when the temperature rises on consecutive days at a period earlier than the day previous, the disease is on the increase; and conversely when the temperature defers its rise to a period later than the twenty-four hours, the fever is on the decrease. This may be accepted as a maxim, and serves to confirm the idea of a parasite of increasing and declining virulence. The future of the parasite and the type of fever it brings about are not, however, so assured. Quotidians so frequently usher in all other types, that opinions, as to the exact type one is dealing with, have to be guarded for a day or two after initiation. The most frequent issues of a prolonged quotidian are one of the irregular forms of fever, and fevers characterised by periods of long intervals. It may be stated as the present accepted belief that quotidian parasites either sporulate or result in the crescent form. When sporulation takes place the quotidian form is continued, but when crescents result, the type of fever is changed to irregular.

Tertian Fever.—Golgi has well-nigh settled the question of the parasites causing fevers with forty-eight hour intervals. Although, however, there can be no doubt that a characteristic form of parasite is present when tertian fevers are the rule; we cannot yet be positive that it is a distinct species that we are dealing with. The fact that many tertians begin as quotidians rather goes against this hypothesis.

Quartan Fever.—As with tertian so with quartan fever, Golgi has

established the association between this variety and a definite form of parasite. The same remarks apply here as with tertian, namely, that although the parasite is constantly found in the blood of persons suffering from fevers characterised by cycles of seventy-two hours, that does not constitute an *à priori* proof of a separate entity. Against this argument are the many statements, backed up by convincing proofs apparently, that these parasites breed true. If such is the case, separate species or at least varieties must necessarily exist, and the fevers we group together as malarial are separate diseases. It may be that the attempt to clear up this intricate problem of malaria has led us too far.

Summer and Autumn Fevers.—Roman fevers occurring during the summer and autumn have been carefully investigated, with the result that as many as three varieties of parasite have been brought to light. They are: (1,) The pigmented quotidian; (2,) The non-pigmented quotidian, and (3,) The malignant tertian. Of these the existence of No. 1 is doubted (Golgi); and the interpretation of No. 3 is set aside (Grassi and Feletti). The desire to establish distinct parasites seems in this instance to have been premature, for Golgi found all three types co-existing in the blood in the spléen, one of the forms only maintaining a predominance for the time being. This observation is pertinent to the whole question of separate species in malarial fevers generally.

Irregular Fevers.—Golgi prefers to use this term instead of the phrase "summer-autumn." The fevers are characterised by long intervals, but clinically irregularity is the feature of greatest prominence. This class will serve as an elastic one, into which many undefined types will find their way.

The greatest amount of interest centres around the pigmented quotidian (Marchiafava), and the crescent form. The former may cause a continuous as well as a remittent, and to this parasite and its effects pernicious fevers may be ascribed.

Surgeon-Major Ross, in a paper read before the Indian Medical Congress, advocates a new basis of classification of Indian fevers. The chaos that exists at the present moment, not only in India, but wherever malaria is accredited to exist, is very humiliating from a scientific point of view, and very detrimental as a satisfactory basis of treatment. Until a scientific foundation of classification is reached persons living in regions known to be malarial will continue to be poisoned with quinine, as at present obtains, whenever the temperature of the body rises. Surgeon-Major Ross proposes as a first step towards arranging our ideas that a distinct name, say "Laveran's

Disease," be given to all cases in which the parasite he discovered is found, and that the term "malaria" should be deleted from the official nomenclature of disease, or tied down to mean some definite quantity in the multifarious varieties of Indian fevers. Laveran's disease, which has been shown to be synonymous with most forms of intermittent fever, has not yet been proved to be a 'malarial' fever at all. This remark strikes at the very root of our belief, and shows how slender is the knowledge of tropical fevers we possess to-day, whenever the agues are put in the balance and weighed as to their fitness to be ranked as malarial.

The term "*enteric*," so frequently in use in India, is much cavilled at by medical men in other parts of the world. It is just possible that enteric is being used to cover as many distinct diseases as is "malaria," and there is no doubt that the handy term "simple continued fever" is a group in which many indefinite cases of either are placed. Surgeon-Major Ross proposes to clear up these terms by a clinical classification as follows: "Simple continued fever" should be re-baptized "fever" without any qualifying phrase, but with the following sub-headings: (*a*,) Fever with intestinal symptoms; (*b*,) Fever with enlarged spleen; (*c*,) Fever with other concurrent symptoms (specifying them); (*d*,) Fever without any concurrent symptoms. It will be seen that the first sub-heading comes near to what we know as enteric, and impresses the fact still more keenly, that in place of the word "enteric," as now used, aiding the nomenclature by narrowing its meaning, quite the opposite is the case; the loose application of the term throws us back as far as we were in pre-Jennerian days.

Changes in the Viscera resulting from Chronic Malaria.—Surgeon-Capt. L. F. Childe[1] remarks that though all the organs show some evidence of the effects of long-standing malaria, it is the liver and spleen chiefly which show most persistently the deleterious results. The changes are grouped under two headings, namely, (*a*,) The pigmented, and (*b*,) The cirrhotic. The pigmented liver is enlarged, more solid than normal, and of a dark-chocolate or slaty colour. The capsule is thickened, and invariably adherent to the neighbouring parts. The pigment is met with at the circumference of the lobules, in and around the interlobular veins. The cirrhotic liver, due to malaria, resembles that arising from alcohol, except that in the malarial liver the contracting connective tissue advances farther into the intra-lobular regions. Childe's explanation is that the spleen becomes primarily engorged by "fevers"; that the red corpuscles are there broken up, and their pigment washed away by the blood stream to the liver. In the liver the pigment is necessarily deposited in the

inter-lobular capillaries, and causes irritation of the connective tissues and subsequent thickening. We have therefore a primary splenic and a secondary hepatic enlargement. This is of course the reverse of the sequence met with in alcoholic cirrhosis, and therefore a diagnostic feature. In both the liver and spleen, there is in the earlier stages much pigment and a little cirrhosis, whereas in the later stages there is much cirrhosis and little pigment. This is explained by the fact that as the disease proceeds the red corpuscles are diminished in numbers, and the deposit of pigment less generous in consequence. **Quinine,** especially in the early stages, is a potent and reliable drug.

Dr. Manson, in his Goulstonian lectures, formulated the history of the plasmodium malariæ outside the human body. His idea arose from the fact, that as a necessary stage in the life history of the parasite is the development of flagella, and as these were produced only on the microscopic stage—that is outside the human body— that it betokens a constant process essential to the continuance of the parasite. The observation of flagella in the microscopic field has been often made, but the elevation of the process to a distinct and essential phase in the life history of the plasmodium is a great step in the conception of how the parasite grows and has its being. Many observers object to many of the prominent features claimed for the plasmodium, as they are capable of being seen only after prolonged watching on a microscopic stage, and maintain, that if blood corpuscles are watched sufficiently long below a cover-glass, almost any corpuscular change may be made out. This apparently post-pathological change, however, has been shown by Manson to be of classical and scientific interest of the first order ; in fact, no other than a stage of development in the life history of the parasite.

Dr. Manson has revived the *mosquito theory* of the spread of malaria. This theory, which was at one time suggested by Laveran, is no other than that the mosquito sucks the blood of tropical residents, and the corpuscles containing the plasmodium are withdrawn in the process and gain entrance to the stomach of the mosquito.

The plasmodium being contained in a corpuscle is protected from phagocytes while in the human blood ; but whilst protecting it, the parasite being intra-corpuscular, cannot develop, and it is only by gaining the stomach of the mosquito, and there being exposed to the action of digestive fluids, that it can get rid of its sheath and become free. At the same time that it becomes free the parasite, which while intra-corpuscular was motionless, now develops "flagella," by which it is endowed with motion. The power of movement enables it to escape from the digestive juices of the mosquito's stomach and bury

itself safely in the tissues of the mosquito's body. There it will remain possibly in a quiescent state until the death of its host, when it will be deposited in, or on, the water or the swamp which the animal haunts. From water to the human body is an easy step, and in this way is the cycle kept up. The analogy between this life-history and the life-history of the filaria, both in and out of the human body, is drawn by Dr. Manson in a most convincing manner. Nor has he left this to mere theory and speculation. Conjointly with Surgeon-Major Ross he is able to present a very practical demonstration of the part played by the mosquito; and Ross's work has been and is being carried out with scientific care and precision. Without entering into the detail of these investigations it may be said that Ross's results bear out Manson's theory.

The microscopic observations made by Dr. Woldert elucidate the following points: (*a*,) That phagocytes disappeared at the onset of the fever, but made their appearance later in a very active form; (*b*,) That crescents did not occur in the blood until the fever had lasted some days; (*c*,) The absence of flagella, which is remarked upon, is to be accounted for by the fact that the various specimens were not observed for a sufficiently long period.

Malarial and Tubercular Phthisis.—Dr. Manson[2] relates a most instructive case of phthisis. The patient presented the usual symptoms of rapidly advancing phthisis; but owing to the high evening temperature and the enlargement of the spleen which were present, the blood was examined for the plasmodian malaria. In the blood crescent-shaped parasites and ring-shaped intra-corpuscular plasmodia were readily observed. In consequence of the discovery **Quinine** was immediately administered, first in a 15-grain dose, and subsequently in 5-grain doses three times a day. The temperature rapidly fell, and lasting benefit was the result upon the patient's health. In malarial countries the treatment of phthisis, even when tubercle bacilli are met with in the sputum, should be controlled by a careful examination of the blood for the plasmodium at an early stage of the disease.

Malarial Rheumatism.—In the "Indian Med. and Chir. Rev.," Jan. 1896, attention is drawn to this form of ailment. It has long been known and described by the natives of India as a distinct disease under the name of "Bai." The knee and loins are the parts most keenly affected, but occipital and dental neuralgia occasionally supervene. The attacks observe distinct periodicity; the accessions of pain coincide with the onset of fever; the heart sounds after a time become muffled, the pulse is irritable, and pericarditis and anasarca in some

cases develop. The treatment in acute cases is **Quinine** or **Cinchona Bark**, and in the more chronic cases, **Arsenic** in the usual doses.

Malarial Hæmatinuria is dealt with by Dr. Woldert,[3] of Texas. The case he bases his remarks upon is interesting in several ways. Perhaps the point most worthy of note is that although the patient was the subject of fever, no hæmatinuria occurred until two days after taking a quantity of quinine. Further, that the condition continued until the dosing with quinine was stopped. The writer in common with many others has come to consider hæmatinuria, if not actually caused by quinine, to be at any rate a condition in which quinine is an absolute poison. The treatment which the writer has found advantageous is that by **Turpentine.** There can be no doubt that malarial hæmatinuria is not a disease for which quinine is useful, and during its continuance quinine should be witheld and 10-drop doses of oil of turpentine given every four hours instead.

Dr. Woldert notifies a fact worth remembering, namely, that the skin, when it becomes icteric from causes other than biliary obstruction, does not itch.

TREATMENT.—Dr. Klein,[4] of Syria, classifies malarial fevers under four heads : (1,) Intermittent fever ; (2,) Pernicious fever ; (3,) Hæmaturic fever ; (4,) Larval fever. The treatment of intermittent fevers is in ordinary cases confined to the administration of **Quinine** given *one hour after the sweating* stage has ceased. The dose recommended is 15 or 20 grains at once, followed by 5-grain doses every four hours for twenty-four hours. Should vomiting be persistent it may be stopped by a mustard plaster to the pit of the stomach, and the following formula is useful :—

℞ Cocaine Hydrochlor.	gr. ij	Syrupus simpl.	
Aquæ	℥ij	Aquæ Aurantii florum	āā ℥v

Sig.—A teaspoonful every two minutes.

When the temperature is very high :—

℞ Sodii Salicyl.		Syrup. simpl.	℥j
Antipyrin	āā gr. xxx	Aq. Aurantii florum	℥v
		Aquæ	℥iij

Sig.—A tablespoonful every hour for adults ; a teaspoonful for children under three years ; a dessertspoonful for older children.

The author prefers the hydrochlorate of quinine to the sulphate. For enlarged spleen, the result of malarial infection, quinine is to be used in the following combination :—

℞ Quininæ Hydrochlor.	gr. xxx	Liquor. Potassii Arsenitis	℥ss
Tincturæ Quassiæ		Syr. Aurantii florum	℥j
Tincturæ Cinchonæ	āā ℥j	Aquæ	℥v

Sig.—Two tablespoonfuls daily before dinner.

When the splenic hypertrophy is of long standing, 15 grs. of **Iodide of Potassium** per diem is of value. Local hydrotherapy is recommended. The patient should lie on the back naked, while 5 to 8 quarts of cold water are poured upon the region overlying the spleen from a height. The part should then be vigorously rubbed for five minutes.

Pernicious fever in the algid stage requires to be treated by hypodermic injection given as follows :—

℞ Quininæ Hydrobromatis	ʒss	Alcohol	ʒss
Ether Sulph.	ʒij		

Fifteen minims contain 3 grains ; about ten injections of this amount, or 30 grains of quinine should be given.

Alcoholic stimulants are a necessary accompaniment in all malarial fevers with much depression.

Surgeon-Lieut. Rogers, I. M. S.,[5] records several cases of malaria treated by **Creasote** externally. External application of drugs of various kinds is used in many countries, when internal remedies have failed, and in Italy quinine applied externally, by rubbing on the powder by hand all over the body, is a time-honoured practice. The plan adopted by Mr. Rogers is to rub 15 minims into the axilla, and cover the part over with cotton wool afterwards. This is done whilst the temperature is high. It is claimed that perspiration is promoted, that increase of temperature is arrested, and in a specifically short space of time lowered. Further, that the distressing symptoms of headache and malaise are markedly relieved to the great comfort of the patient. It is, of course, easy to criticise and to disparage, and to point out that fevers naturally tend to abate their virulence, and that external sponging with water alone, or "medicated" with some substance of preference, advances claims to consideration. The difficulty is to estimate by how much creasote or any other drug or application hastens cure or alleviation. Surgeon Rogers does not leave this untested, for in the same cases treated during other paroxysms by other means less beneficial effects were attained. In even continued fevers the treatment by creasote lessened the fever for a time. Guaiacol is bracketed along with creasote by Mr. Rogers, but he gives no account of the administration of the drug.

The practice of external application is certainly a safe method of administration, and Mr. Rogers has made a praiseworthy attempt to systematise our knowledge in this method of drug administration.

Dr. A. L. Bose[6] describes a case of malaria treated by **Ammonia Picrate.** The case was one of quotidian fever of a very persistent type. Quinine had been given *ad nauseam*, until in fact the poisonous

effects of prolonged drugging were manifest. The patient was going from bad to worse, when Dr. Bose discontinued all other medicines and administered ammon. picrate, ¼ gr., with sodii bicarb. 2 grs. thrice daily. After two or three days the fever lessened, and in a week it disappeared altogether. In other cases of a similar nature the same drug did good.

Extract of **Anneslea Febrigua** (known as calisaya) has been employed in the treatment of malaria by Dr. Maurage, of Paris. The plant belongs to the *Leguminosæ*. The treatment was tried upon patients returned from Madagascar and Tonquin. The dose of the extract is ½ a drachm, and when fever is high it is administered every two hours. The drug is claimed to have a double action, namely, an antipyretic and a specific effect. Its antipyretic action is apparent in all cases of increase of temperature, such as in the exacerbations met with in phthisis ; in which, although the effect was temporary, lasting only for a day, the action was none the less manifest. In the case of malaria, however, a specific effect is claimed for the anneslea. Of nine cases recorded, three had no recurrence of fever, and of the remaining five mild relapses only took place. In one case more persistent than the others, the doses had to be repeated when curative results are recorded. Dr. Maurage further advocates the beneficent effects, inasmuch as the temperature did not fall below normal after discontinuance of the drug, and the antipyretic action was not accompanied by either sweating or depression.

The administration of **Quinine** to children is dealt with by Binz. He suggests several methods of giving the drug : (1,) Quinine perles--gelatine capsules containing 1½ gr., may be given to children of three years of age ; (2,) Quinine chocolate, each piece containing 1½ gr. ; (3,) Suppositories made of cocoa butter, and containing doses up to 7½ grs. ; (4,) A hypodermic solution of 1 part of hydrochlorate of quinine in 4 parts of water ; (5,) Quinine may be given by enema ; the quantity of a solution used should not exceed 1 ounce ; (6,) Tannate of quinine, which in powder is almost tasteless, is a fairly satisfactory substitute for other preparations, but the dose given must be double that of the sulphate ; and the effect is not produced so rapidly or certainly. Binz's methods were tested during an epidemic of whooping-cough, but the hints conveyed in the communication are important to practitioners in the tropics.

REFERENCES.--[1] "Indian Med. Chir. Rev.," Feb. 1896 ; [2] "Brit Med. Journ.," June 6, 1896 ; [3] "New York Med. Journ.," Jan. 4 1896 ; [4] "Therap. Gaz.," Nov. 15, 1895, and "Bulletin générale de therapeutique" ; [5] "Brit. Med. Journ.," Jan. 4, 1896 ; [6] "Indian Lancet," March 16, 1896.

MALARIA. *Henry Dwight Chapin, M.D., New York.*

Dr. Moncorvo[1] has tried **Phenocoll Hydrochloride**, in doses of from 5 to 30 grains in twenty-four hours, generally administered in solution. It has generally been well tolerated, and rendered good service in several cases in which it was difficult or impossible to administer quinine, but it cannot be said to possess any advantage over quinine in pernicious fevers. In mild cases it is useful and safe, even when the kidneys are somewhat diseased. He has also tried **Asaprol**, in doses of from 5 to 45 grains *per diem.* It is easy of administration, on account of its solubility, its slightly bitter taste being concealed by an aromatic syrup, and it does not give rise to any untoward symptoms.

REFERENCE.—[1] "Gaz. heb. de méd. et de Chir.," No. 50, 1895.

MASTITIS. *Priestley Leech, M.D., F.R.C.S.*

For treatment of mastitis, and to prevent the formation of mammary abscess, W. G. Spencer[1] recommends expression of the milk by the hands. He says the milk ducts are blocked with curds, and if the breasts be pressed with the hollow of the hands, the plugs are removed, the milk flows, and this prevents the formation of abscess. A good deal of pressure is often required, and it may even be necessary to give an anæsthetic.

J. Kaarsberg[2] recommends **Massage** in the treatment of mastitis. The expressed milk is slimy, and contains yellow and grey little lumps, and in two cases it also contained staphylococcus pyogenes albus, or aureus. The value of these bacteriological experiments is somewhat discounted, because healthy breasts in some cases gave similar results. The treatment must be begun as early as possible after the onset of the mastitis.

Brindeau[3] recommends squeezing out the milk in mastitis, washing the nipples with antiseptic solutions, and says that the child ought not to be fed with milk from the inflamed beast, for gastro-enteritis, pemphigus, and conjunctivitis, may be caused by so doing. He believes that inflammation of the milk ducts plays a great part in the causation of breast abscess; the breast may become infected through the blood, or through the lymphatics, but a more frequent cause of infection is through the external ducts, by means of the surgeon's, nurse's, or child's fingers. Purulent conjunctivitis in the child may infect the mother's breast. He also says that staphylococci have been found in healthy ducts, as well as in galactophoritis.

REFERENCES.—[1] "Lancet," Feb. 29, 1896; [2] "Hospitals-Tidende," p. 573, Bd. iii., quoted in "Cent. fur Chirurg," No. 7, 1896; [3] "L'Union médicale," Feb. 29, 1896.

MEASLES. *Henry Dwight Chapin, M.D., New York.*

Dr. Weisbecker[1] speaks of the treatment of measles with the **Blood Serum of Convalescents.** Measles may be included among the diseases in which the degree of immunity is considerable, and for this reason it furnishes a suitable example for the observation of any influence that may result from the therapeutic employment of the blood serum of convalescents. The first case occurred in a girl nine years old, who presented characteristic initial symptoms of measles without exanthem. An injection of 10 grammes of blood serum from a convalescent from the same disease was given. The catarrhal symptoms appeared for a day to be held in check, but they returned, and on the following day an eruption of peculiar character and distribution appeared. Large areas of cutaneous surface escaped, and the face was involved last. While no radical effect was observed, a certain favourable influence appeared.

Drs. Meslay and Jolly[2] call attention to dysenteric lesions following measles. Four cases are reported, the disease in each case being complicated with a diarrhœa characterized by mucous and bloody stools. At the autopsy there was found ulceration of the sigmoid flexure and rectum, absolutely analogous to those of true dysentery, but with small follicular ulcers extending even to the small intestine, and in the most aggravated case far up in the small gut.

REFERENCES.—[1] "Zeit. f. klin. Med.," Nos. 3 and 4, vol. xxx; [2] "Rev. mens. des Mal. de l'Enf.," Aug., 1895.

MELANCHOLIA. *Græme M. Hammond, M.D., New York.*

In a comprehensive article on this subject in the "British Medical Journal," Rayner[1] states that the primary step in the treatment of this disease is an exhaustive investigation of the patient's history, habits and environment, and a thorough examination of every bodily organ, together with the best means for the removal or relief of the abnormality, if there is one. Rest in bed he considers very important, but only in cases in which there is great physical weakness or rapid emaciation, and where there is complete insomnia, in sitiophobia, and in acutely suicidal cases. Loss of muscular activity should by met by **Massage,** which should be made as protracted as possible so as to afford diversion of attention to the sensory impressions. Baths and hydro-therapeutic applications may be given for the same purpose. Mental diversion should also be furnished by reading aloud, music, games, and every means which the mental state, tastes of the patient, and the circumstances admit. Supervision and companionship should be constant, and little of the day should be left without some attempts at diversion

of the attention. As a rule an excessive diet is indicated, but in some cases a strictly milk diet will act better. Rest in bed is indicated in cases of extreme sensory irritability, but it is specially contra-indicated in erotic cases and in cases having sensory hallucinations and illusions. The author believes narcotics and sedatives are often pernicious in melancholia, and that they almost invariably protract and intensify the disorder. Sleeplessness due to peripheral irritation as, for instance, to the presence of undigested food in the stomach, must be met by removal or avoidance of these conditions. In most cases sleeplessness is due to an excessive amount of blood in the brain. The object should be, therefore, to divert blood from the cerebral area to other areas of the body, especially, of course, to the abdominal, or to the limb areas. The former may best be accomplished by giving hot fluid food, hot fluids, or a small amount of stomachic stimulation; the latter by stimulation of the cutaneous surface by warm baths, the warm pack, and abdominal compresses. Cold to the feet, followed by brisk rubbings, is at times efficacious.

REFERENCE.—[1] "Therap. Gaz.," Jan. 13, 1896.

MÉNIÈRE'S DISEASE. *Græme M. Hammond, M.D., New York.*

Lemairey[1] speaks highly of the efficacy of **Pilocarpine** in this affection. He uses a solution of 10 centigrammes of the nitrate of pilocarpine dissolved in 10 grammes of distilled water. Injections were given every day, the patient lying in bed during the time, and until after the "sweat crisis," that is to say, for about two hours. The dose at first was 4 milligrammes of the solution, and was increased by 1 milligramme every two days. Besides the physiological action of the drug upon the saliva, the sweat, and the urine, a progressive amelioration in the general state of the patient was distinctly noticeable. Fifteen days after the treatment was begun the patient was able to go about the wards of the hospital, and in about fifteen days more he was practically cured.

REFERENCE.—[1] "Med. Rec.," Aug. 8, 1896.

MENINGITIS (Tubercular). *Augustus Caillé, M.D., New York.*

Tapping the Vertebral Canal.—Quincke in 1872 reported the discovery of a free communication of the subarachnoid space of the brain and spinal cord.

The possibility of diffusing coloured liquids through the subarachnoid space of brain and spine has been firmly established for more than twenty-five years, and it may appear strange that a practical application of such knowledge should have slumbered for so long a period until

the original experimenter, Quincke, in 1891 again drew attention to these facts and to the possibility of tapping the spinal canal in the lumbar region.

This tardiness in establishing local treatment for affections of the central nervous system is readily accounted for by the difference in pathological conception of to-day as compared with that of a quarter of a century ago.

Virchow's cellular pathology with one blow demolished the idle philosophical theorizing in medicine in vogue in the early part of this century, and gave us a solid foundation for more exact work, but the labours of Pasteur, Lister, Koch, and Behring have given us the real key to the hitherto mysterious biological and pathological phenomena, and have furnished the missing link which connects cell proliferation with the pathological phenomena of the living organism as we view it to day, and gives stimulus and inducement for direct local antiseptic treatment.

During the past five years lumbar puncture has been practised in a large number of cases (see Literature, page 400), and is at present a recognized diagnostic method in medicine.

Directions.—Place the patient in the recumbent posture with knees drawn up and spine flexed, *i.e.*, curved. An anæsthetic is advisable in adults and older children, as an untoward movement may break off the aspirating needle *in situ*. The operation may also be performed in the sitting posture (bicycle position), or, in the case of children, the patient may be placed across the knees of the attendant.

Under the usual aseptic precautions a medium sized aspirating needle attached to its syringe is pushed through the intervertebral space midway between the spinous processes of the third and fourth or fourth and fifth vertebræ, directly in the middle line or about an eighth of an inch to one side of the median line. A line joining the highest points of the crista ilii will pass over the centre of the fourth lumbar vertebra, and is a reliable guide and landmark.

The needle enters the spinal canal at a depth of from 2 to 8 centimètres, and the cerebro-spinal fluid comes out drop by drop, or in a slight stream. Aspiration is not necessary ; the syringe is used merely as a handle. The quantity of liquid which flows out will vary from a few drops to several ounces. After withdrawing the needle the puncture wound is sealed in the usual manner (*Iodoform collodion*).

In cases of tubercular meningitis and ordinary hydrocephalus the liquid is perfectly clear. In other forms of meningitis the liquid is cloudy or turbid.

The following table† will show the character of the fluid obtained by lumbar puncture in various pathological conditions:—

Case.	Sex	Age.	Clinical Diagnosis.	Sugar.	Albumin.	Bacteria.	Autopsy and Remarks.
		Y. M.					
1	M.	3 0	Tuberc. Meningitis	..	..	Tubercle bacilli	....
2	M.	4 0	Tuberc. Meningitis	..	..	Tubercle bacilli	Tuberc. Meningitis
3	F.	2½ 0	Tuberc. Meningitis	..	..	Tubercle bacilli	Reported June 15, 1895, in "N.Y. Medical Journ."
4	F.	35 0	Acute Mania	½ p.c.	Trace	Sterile fluid	....
5	M.	5 0	Cerebro-spinal Meningitis, Broncho-pneumonia	¼ p.c.	Trace	Pneumococcus	Recovery
6	M.	3 0	Sarcoma of Kidney, Broncho-pneumonia	⅛ p.c.	..	Pneumococcus	....
7	F.	2, 0	Tuberc. Meningitis	..	Trace	No bacilli found	....
8	F.	1 4	Broncho-pneumonia, Convulsions	¼ p.c.	Present	Tubercle bacilli	Tuberc. Meningitis, Catarrhal Pneumonia
9	F.	1 0	Diphtheria of Pharynx	..	..	Staphylococcus pyogenes aureus	....
10	M.	2½ 0	Pneumonia Dextra	..	3 p.c.	Pneumococcus	....
11	M.	2 0	Acute Hydrocephalus	Trace	Trace	Sterile fluid	....
12	M.	1½ 0	Acute Hydrocephalus	Trace	Trace	Sterile fluid	....
13	M.	½ 0	Acute Eczema, Nephritis	..	Trace	Streptococcus	Autopsy: Acute Nephritis
14	F.	½ 0	Hydrocephalus	..	..	Sterile fluid	....
15	F.	6 0	Tuberc. Meningitis	..	..	No tubercle bacilli	Had apex pneumonia a year before
16	M.	1½ 0	Tuberc. Meningitis	Trace	Trace	Tubercle bacilli found	Autopsy: Tuberculosis of meninges and lungs
17	M.	6 0	Tumour of Brain	1/5 p.c.	Trace	Sterile fluid	Cysto-sarcoma of brain
18	M.	0 8	Diphtheria of Nose	..	..	Streptococcus	....
19	F.	5 0	Chorea	..	..	Sterile fluid	....
20	F.	2 0	Pertussis	..	..	Sterile fluid	....
21	F.	4 0	Tumour of Pons.	..	..	....	Only a few drops of fluid obtained

† Reprinted from the "Archives of Pediatrics," Aug., 1896.

It will naturally occur to any one working in this direction that a liquid may be just as readily injected into the spinal canal as it is removed therefrom, particularly after the pressure of the fluid has been diminished.

I have done this in two cases with a view of favourably influencing the course of an otherwise incurable tubercular meningitis, and in hopes of gaining somewhat similar results as we obtain in the local treatment of tubercular peritonitis.

The first instance in which I attempted local treatment is Case 8 on our list. The patient, a girl of sixteen months, lying in convul-

sions for over twelve hours was first tapped and 20 c.c., of cerebro-spinal fluid were allowed to flow out. I then injected 15 grains of sodium salicylate dissolved in 5 c.c., of water (sterilized). This procedure had no special noticeable effect upon the convulsions, pulse, or temperature of the child. Death took place two days later and the autopsy performed by Dr. Ogden, our house surgeon, showed a soft œdematous brain, studded with tubercles, and the lungs in a state of catarrhal pneumonia.

The second patient, a boy of eighteen months, was an advanced case of tubercular meningitis in coma, Case 16 of list. After removing 20 c.c. of fluid in which the specific bacilli were subsequently found, I injected 5 grains of iodoform suspended in 5 c.c. of sterilized water.

A rise in the frequency of the pulse was observed, otherwise nothing of importance. On the following day a second injection was made into the lumbar subarachnoid space. Death took place four days later. The autopsy performed by Dr. Ogden showed tubercles at the base and convexity of the brain, and miliary tuberculosis of lungs and surface of spleen.

The two cases here cited prove to me that a more thorough washing of the sub-arachnoid space is necessary in order to make an impression upon a case of tubercular meningitis. At the next opportunity which presents itself I propose to lay bare the dura by removing a button of bone with the trephine, and irrigate the subarachnoid space from a lumbar puncture upward through an opening in the dura. Irrigation by the shorter route through the lateral ventricles will probably not reach the convexity and will be inadequate.

In conclusion it may be stated that lumbar puncture is very valuable as a diagnostic means in suspected intraventricular hæmorrhage, or hæmorrhage within the spinal canal, and in inflammatory affections of the meninges. It is a palliative measure in increased brain pressure, and should be further tried with a view of establishing direct medication.

*LITERATURE.—Quincke, "Arch. für Anat. & Phys.," 1872, pp. 153 and 177; Quincke, "Transactions of xth Congress for Internat. Med.," p. 338; Quincke, "Berlin. klin. Woch.," 1891, p. 929-964; Quincke, "Volkmanns Sammlung," N.F., 1893, No. 67; Von Ziemssen, "Trans. xii. Congress Internat. Med.," p. 197; Morton (C. A.), "Brit. Med. Journ.," 1891, ii, p. 840, and Ibid., 1893, i, p. 741; Paget (Stephen), "Lancet," 1893, ii, p. 873, and Ibid., 1894, i, p. 931; Ord & Waterhouse, Ibid., 1894, i, p. 597; Lichtheim, "Deut. med. Woch.," 1893, pp. 1186-1234; Lichtheim, "Berlin klin. Woch.," 1895, p. 269; Stavelmann, Ibid., 1895, p. 581; Wynter (E.), "Lancet," May, 1891; Wyss (O.), "Corresp. Blatt. f. Schweizer Aerzte.," No. 8, 1893; Browning (Wm.), "Transact. Amer. Neurol. Assoc.," 1894, p. 102; Dennig, "Münchner

med. Woch.," 1894, p. 983; Freyhan, "Deut. med. Woch.," 1894, p. 707; Fürbringer, "Berlin. klin. Woch.," 1895, p. 272; Heubner, Ibid., 1095, p. 289; Caillé A., "New York Med. Journ.," June 15, 1895, and "Archives of Pediatrics," Aug. 1896; Jacoby (G. W.), "New York Med. Journ," Dec., 1895 and Jan., 1896; Discussion, "Berlin. klin. Woch., 1895, p. 287; Kiliani (O. G. T.), "New York Med. Monats.," 1895, pp. 929-964; Wentworth, "Archives of Pediatrics," Aug. 1896.

MENSTRUATION. *Theophilus Parvin, M.D., Philadelphia.*

Inter-menstrual Pain.—Dr. J. Halliday Croom,[1] discussing a few cases of this disorder occurring under his own observation, says he believes that the condition may have three different manifestations: (1,) A group of cases in which there is no external manifestation; (2,) Those cases in which the pain is associated with an escape of blood; (3,) Those in which, as in two of his cases and some of the others, the inter-menstrual pain is associated with a clear discharge.

In regard to the first class, he suggests that the pain is owing to the fact that in these cases menstruation not occurring simultaneously, and owing possibly to the fact of thickening of the capsule of the ovary, or some such cause, rupture of the ovisac occurs with pain. In the second class he found more or less endometritis, anteflexion, and enlargement of the uterus. In the third class, in which a leucorrhœal discharge is said to occur with the pain, and when, just before the usual date of the occurrence of the pain, a swollen and fluctuating condition of the tubes was made out in some cases, he thinks the cause of the pain was undoubtedly tubal dropsy reaching its full development at mid term.

We only add to this brief abstract of Dr. Croom's valuable paper that most authorities regard inter-menstrual pain as a symptom of endometritis in the majority of cases, and that its cure then must be that of the disease of which it is an indication.

REFERENCE.—[1] "New York Med. Journ.," Feb. 22, 1896, from "Edin. Med. Journ."

METATARSALGIA (Morton's Disease).

Priestley Leech, M.D., F.R.C.S.

Pieri[1] reports the case of a girl, aged twenty-two, who for eighteen months had suffered from intermittent attacks of pain in the third and fourth right metatarso-phalangeal articulations. There was no history of rheumatism. The pain was very severe, and radiated into the sole of the foot. Attacks began to occur every fifteen or twenty days, generally relieved by rest and aggravated by walking or movements of extension. There was no appearance of injury, disease, or alteration

in the affected joint. The joint seemed a little more mobile than its fellow. At last the attacks became continuous, and were accompanied by a certain amount of spasm of the leg.

Pieri injected **Tincture of Iodine** around the joint with the view of tightening up the ligament. Seven injections were practised in all, and the patient left the hospital cured, and has remained so for the last five months.

REFERENCE.—[1] "Rif. med.," Dec. 18, 1895, quoted in Epit. "Brit. Med. Journ.," Feb. 1, 1896.

METRITIS. *Theophilus Parvin, M.D., Philadelphia.*

Donniz[1] advises "absolute repose in bed, as for a fractured thigh, with vaginal irrigation; if blennorrhagic, dilatation of the uterus and **Iodoform Pencil** or swab; if puerperal, scraping or continued intra-uterine injections; if chronic, copious vaginal douches for three days, with mechanical dilatation of the uterus for five or six days, cleansing the uterine cavity, and inserting a drainage-tube the size of the thumb. This is removed every other day to make an application of **Iodine** inside the uterus. After three of these applications, the drain is replaced by a vaginal tampon, which is left for four days. This treatment lasts for twenty days, when the patient may leave her bed. Any special treatment indicated by the neck of the uterus or by the condition of other pelvic organs, must also be considered."

M. Gaudiosi[2] considers **Ichthyol** as a specific in the treatment of uterine diseases as powerful in these, as is quinine in malarial fevers, and as mercury in syphilis. Its resolvent action facilitates the re-absorption of exudates, and improves the nutrition of tissues in chronic inflammation. Its employment from the beginning of the disease promotes absorption of the parametric exudate, and it is only when an abscess has formed that operative intervention becomes necessary. Usually from seven to eight days is sufficient for the absorption of a moderate exudate. Ichthyol is at the same time an excellent local analgesic; it is strongly antiseptic, and by its constriction of the vessels it exerts an antiphlogistic action.

Ichthyol is employed as an ointment according to the following formula: Ichthyol, 10 parts; lanoline, 40 parts; opium, 1 part; vaseline, 10 parts. Tampons dipped in glycerine and ichthyol, 10 to 100, are also useful. For internal use it is well to combine it with belladonna: ichthyol, 2 grammes; belladonna, 15 centigrammes, and powdered liquorice root, q.s. Make into 12 pills, and 2 or 3 pills are taken daily.

For hypodermic injection Gaudiosi employs the formula of Damiens: Ichthyol, 3 centigrammes, and sterilized water, 1 gramme. (See also "Gonorrhœa in Women.")

REFERENCES.—[1] "New York Med. Record," from "Journ. des sci. méd. de Lille"; [2] "Revue médico-chirurgical des maladies des femmes," 1896, from "Giornale intern. delle scienze med."

METRORRHAGIA. *Theophilus Parvin, M.D., Philadelphia.*

TREATMENT.—Kallmargen[1] gives, as his conclusions in regard to **Hydrastin,** from using it in eighty-six cases of uterine hæmorrhage, that the drug is without value in chronic endometritis, should not be used in pregnancy, in uterine myomata, and in cases of inoperable cancer, but is of signal value in simple menorrhagia, in post-partum hæmorrhage, and in bleeding caused by hæmatocele, and in diseases of the uterine appendages.

Henocque[2] advises **Salol** and **Antipyrin** in metrorrhagia, applying a mixture of equal parts and using a small tampon of absorbent cotton.

Stypticin is among the new remedies advised for uterine hæmorrhage, as stated, first in the "Therapeut. Monat.," Berlin, and then in the "New York Med. Journ." It is the trade name of **Cotarnine Hydrochloride,** and is closely related to hydrastin, being an amorphous, sulphur-yellow powder, readily soluble in water, light, causing the solution to become cloudy.

At first Gottschalk found no effect, because the doses were too small, but increasing the dose to ¾ of a grain five or six times a day, remarkable results were obtained. Not only was it used by the mouth, but in some cases he employed it hypodermically, using a 10 per cent. sterilized solution in water, and in case of profuse menorrhagia injected 3 grains (30 drops of the solution) deep into the gluteal muscles, once a day. It was found especially useful if the menorrhagia was associated with dysmenorrhœa. Cotarnine is recommended in hæmorrhage from subinvolution of the uterus; so too, in that from uterine fibroids, in that from fungous endometritis (in the latter, of course, curetting, or cauterisation, is necessary for a permanent cure), in excessive bleeding at the climacteric. It is useless in case the bleeding be consequent upon parametric exudation or of a uterine polypus, and is contra-indicated in threatened abortion. It is of benefit in cases especially of pure congestive menorrhagia, and then the author has found it act well in conjunction with hydrastis or hydrastin. It is well, in treating menorrhagia, to begin with small doses some days before the flow, increasing the quantity when it appears. Cotarnine

may be administered in pill form, or in gelatine capsules. Of course the effect is much more prompt when the remedy is administered hypodermically than when given by the mouth.

REFERENCES.—[1] "Zeits. f. Geb., und Gynäkol."; [2] "Med. Record," Feb., 1896.

MYOPIA.

G. E. de Schweinitz, M.D.
Clarence A. Veasey, M.D. } *Philadelphia.*

The question of *removing the lens* in cases of *high myopia* is discussed by Pflueger.[1] He has operated on thirty-six cases, the ages ranging from seven to forty years. Discission of the lens is first performed, and as soon as the swollen lenticular masses accumulate in the anterior chamber, paracentesis of the latter is performed. The difference between the refractive error before and after the operation varies, ranging from 14·50 to 20 D. Choroiditis and corneal macula, he claims, do not contra-indicate the operation. Detachment of the retina never occurred, and the visual acuity for distance was increased in all of the cases. Alt[2] has also performed the same operation with success.

In the treatment of myopia by subconjunctival injections of corrosive sublimate, Dr. Preounof[3] draws the following conclusions from one hundred cases :—

(1,) Subconjunctival injections of corrosive sublimate caused the rapid disappearance of the symptoms of muscular asthenopia, and enabled the patients to resume their occupations.

(2,) The symptoms of irritation of the choroid and retina, as well as the photopsia, also disappeared rapidly.

(3,) Recent inflammatory phenomena in the fundus of the eye and hæmorrhages in this region disappeared, provided the treatment was prolonged for a sufficient time.

(4,) The visual acuity, the diminution of which depended upon modifications of the media of the eye, increased sometimes to a considerable extent.

(5,) In no case had any complications set in ; several times the progress of the myopia had been arrested.

(6,) In order to prevent a relapse and a return of inflammatory symptoms of the choroid and retina, the treatment should be continued for six or eight months.

REFERENCES.—[1] "Correspond.-Blatt f. schweizer Aerzte," 1895, No. xx., p. 642 ; [2] "Amer. Journ. of Ophthalmology," 1895, No. 6, p. 165 ; [3] "Cazette hebdomadaire de médecine et de chirurgie," July 16, 1896.

NÆVUS (Treatment of). *Priestley Leech, M.D., F.R.C.S.*

Dr. Wharton[1] emphasises the necessity for the early treatment of the various forms of nævus. They are very liable to increase very rapidly in size, and their treatment is as a rule simple. The treatment he recommends is, for capillary nævi, **Excision** or painting with **Nitric Acid**; in port wine mark, multiple **Scarification** or **Electrolysis**; in venous nævus, excision, if this is not forbidden by the size, shape and situation of the growth; in the latter case subcutaneous ligature or electrolysis or actual cautery.

REFERENCE.—[1] "Therap. Gaz.," July 15, 1895.

NASAL STENOSIS. *P. Watson Williams, M.D. Lond. (Bristol).*

Congenital nasal stenosis may be due to the incomplete junction of the ingrowing depression from the ectoderm which ought to meet the portion of the oral passage which forms the nasal passages as it extends outwards by absorption of the hypodermal tissues here at an early period in fœtal life. From the non-absorption of the fœtal web where these diverticula come together, *i.e.*, at the point of junction of the ectodermal skin and hypodermal mucous membrane, stenosis more or less complete results.

I have seen two such cases, in each the membranous occlusion was unilateral, but indications of the remains of the fœtal membrane could be seen on the patent side. Downie, of Glasgow, reports a similar case which, however, he regarded as due to an intra-uterine ulcerative syphilitic lesion, and the child subsequently developed congenital syphilitic manifestations. Jarvis[1] reports two cases.

Thrasher[2] records an instance of congenital osseous stenosis of the naris in a baby who was found to have adenoids. The occlusion corresponded with the choanæ narium in position, and there was no opening sufficiently large to admit the passage of the nasal curette. The thin bony septum was readily broken down with the curette.

Mayo Collier[3] states that out of one thousand and fifty patients, indiscriminately examined by him, only one hundred and ten had fairly vertical septa and symmetrical nasal cavities. The ages varied from one year to ten, but it was extremely rare to find any obstruction other than temporary, below ten years; even up to the time of puberty the majority of septa were normal. Thus we may infer that nose troubles are developed as we advance in years, and are not usually born with us.

Both Morell Mackenzie and Zuckerkandl found that in about 80 per cent. of Aborigines nasal fossæ were normal, whereas superior races show greater disposition to deformity to the extent of 90 per cent.

Collier believes that the deflected septa are consequent on more or less persistent or recurring temporary nasal obstruction. By means of a manometer inserted into one nostril, he says we are enabled to see that during every inspiration the mercury will fall in one limb and rise in the other to the extent of one inch or more. That is to say, every inspiration exhausts the air in the closed nasal cavity to the extent of one inch of mercury more or less. Now the atmospheric weight at sea level is equal to 29 inches of mercury, and exerts a pressure of 15 lbs. on every square inch; one inch of mercury will then be equal to a pressure of half a pound on every square inch. As the average area of the septum may be taken as nine square inches, we see that the comparatively large force of 4½ lbs. may be exerting itself at every inspiration, not only on the thin septum, but on every side of the nasal fossa; on the face, hence the pinched and approximated upper maxillary bones in cases of long-standing nasal obstruction; on the palate, hence the high arched palate and irregular dental arch with crowded teeth; on the soft palate, hence the lessened pharyngeal and post-nasal space, and the tendency to breathe entirely by the mouth, and many other attendant consequences. Collier maintains that the force is sufficient even when divided by ten, to account for all the distortion in the bony walls of the fossæ by the persistent or recurrent mechanical action of temporary nasal obstruction.

Yet other causes may possibly occasionally produce the bony deformities, viz. :—

(1,) *Congenital Causes.*—This must be very rare; thus Zuckerkandl and Welker say that deflections are never found before the seventh and fourth years respectively.

(2,) *Syphilis*, which Collier believes causes spurs, ridges and exostoses in some cases.

(3,) *Rickets*, which Lowenberg held answerable for a large number of deflections.

(4,) *Traumatism*, which Collier considers to be far and away the most frequent cause in young people, next to catarrhs and engorgements of the erectile tissue.

(5,) Growths, polypi, foreign bodies, etc.

The author further cited Ziem's experiments, on artificially blocking one nostril for a long time in young animals. The results were deviations of the inter-maxillary bone and the sagittal suture towards the shut-up side, also lesser length of the nasal bone, of the frontal bone, and of the horizontal plate of the palate bone, smaller distance between the zygomatic arch, and the supra-orbital borders; and smaller size and a symmetrical position of the vascular and nerve

canals on the closed side of the nose. The distance from the two orbits from the middle line was unequal, which, as has been observed in men, leads to asthenopia, astigmatism, and strabismus.

TREATMENT.—Emil Mayer [4] has had a large and very favourable experience of the **Asch Operation,** and though various improvements have been made in the after-treatment of these cases, the technics remain the same. In each instance the operation has been successful, not only in the hands of Drs. Asch and Mayer, but also, the latter observes, in those of Dr. Adams, Dr. Butts, Dr. Roberts, Dr. Colton, and many others. The operation and the after-treatment may be described as follows, taking one of the author's operations as an example. The curved gouge was first introduced to break up any adhesions existing between the septum and the turbinated body, and also to ascertain the presence of any posterior obstruction. The cartilage scissors are now introduced, the blunt edge over the convex surface and over the point of the greatest convexity, and the incision made; the scissors being then withdrawn and again inserted in the same manner, this time at right angles to the first position, or as near to that angle as possible, a second incision is made. The finger is now introduced into the nose on the convex side, pushing the segments into the concavity, care being taken to break them effectively. The long-bladed nasal compressing forceps are now well introduced and firm compression made so as to arrest hæmorrhage and straighten the septum. All clots having been removed, a hollow and perforated vulcanite splint may be introduced on the side of the convexity, one being selected that will fit snugly in the nose and remain concealed. A smaller tube is inserted on the concave side, and serves to prevent the formation of a clot, thus adding to comfort in breathing and, by making equable pressure, preventing subsequent hæmorrhage. This completes the operation. All the instruments used, including the tubes, are carefully sterilized beforehand. A spray of cold **Dobell's Solution** may be used every half-hour in both nostrils.

Fig. 40.—The Asch Tube.

In the particular case in which the above procedures were adopted the tube was worn continuously (being removed for cleansing and reinserted at short intervals) for five weeks, and at night only for another week. Mayer has found that with the rounded Asch tube (*Fig.* 40), the pressure is not so well dispersed over the septum,

The insertion of his vulcanite tube requires no force and should not occasion any pain. The early operations were followed by frequent introductions of the straightening forceps, which were painful to a great degree. The steady pressure of the vulcanite tube renders this procedure unnecessary. The incision may be made with a knife, but, having tried both, Mayer prefers the scissors. He observes that the objection recorded against this operation is "that the septum can not always be brought to a perfectly vertical plane, and, unless it is, the greater air pressure on the concave side, together with the natural resiliency of the cartilage, not infrequently forces the septum farther toward the narrow naris. This is particularly apt to be the case during the period of the greatest constructive activity, a period in which operations on the septum are most commonly demanded." This, if true, would be a serious and valid objection, and recurrences would be the rule. It is fallacious, however, because this operation destroys for ever the natural resiliency of the parts, so that even when a perfectly perpendicular plane has not been attained, free breathing space always exists. Mayer has watched cases extending over a course of years, and in one case, even after twelve years, no obstruction to the free current of air has occurred.

In conclusion, as a result of my experience, it can be confidently stated that the Asch operation: (1,) Establishes permanent freedom of breathing through the affected side; (2,) Results in a straightened septum; (3,) Reduces the deformity to a minimum; (4,) Is of the least discomfort to the patient.

Electrolysis is commended for the reduction of spurs of the nasal septum by Casselberry.[5] The current strength necessary is from 15 to 40 m.a., and 8 to 20 volts, which may be supplied by a 20-cell battery; but the author has adapted the Edison electric light circuit to the purpose by means of lamp resistance, and the McIntosh current controller. The duration should be from six to eight minutes. The chief difficulty in the reduction of cartilaginous spurs is to determine exactly when sufficient destruction has been effected, and care, guided by experience, is necessary to prevent perforation of the septum. A simple duration or bending of the septum cannot be corrected or straightened by electrolysis, and its use in such a case can only result in perforation. The pain is trifling, but the sensation tends to cause syncope. The bi-polar method, by which two needles, one representing each pole, are inserted into the spur, is preferable. The author's needles, devised for the purpose, are of irido-platinum, fixed to a convenient handle; but ordinary heavy sewing needles may be used.

While effective in many instances, the author states that its scope of application should be limited in accordance with the following principles: (1,) Strictly cartilaginous spurs can be thoroughly removed by electrolysis, one, two, or even three operative sittings being required. It is more tedious and less brilliant than the surgical method, but is not accompanied by liability to hæmorrhage. It is not to be endorsed as a universal substitute for the surgical method in even this limited class, but it is a serviceable measure for exceptional individuals of both this type and of type 2, *e.g.*: (*a*,) for cases of minor degree, small spurs of cartilage—or of cartilage and bone, thickened areas, which seem scarcely deserving of surgical treatment; (*b*,) for patients of delicate physique and those of highly sensitive nervous organizations; (*c*,) for bleeding; (*d*,) for those who decline surgical interference; (2,) It will not *remove* spurs which belong to the mixed class of bony and cartilaginous substances, but will reduce them in size; (3,) Electrolysis is powerless to correct *deviations* of the septa in any form.

REFERENCES.—[1] "Annual of Med. Sci.," vol. iii, 1888; [2] "New York Med. Journ.," Dec. 14, 1895; [3] "Med. Press and Circ.," Nov. 20, 1895; [4] "New York Med. Journ.," Dec. 14, 1895; [5] "The Laryngoscope," Aug. 1896; see also, "Journ. of Amer. Med. Ass.," Nov. 9, 1895.

NEPHRITIS (of the Newly-Born).

Henry Dwight Chapin, M.D., New York.

Dr. A. Jacobi[1] considers the varieties of nephritis seen in the very young. A predisposition to nephritis in the young is caused by the fragility of the blood-vessels in the newly-born; by the relative imperviousness of the young renal capillaries compared with the large size of the renal arteries; by the feebleness of the young intestinal muscle, which proves insufficient to expel toxic contents; by the extensiveness and size of the young intestinal blood-vessels and lymphatics, and the large size of the villi, all of which favour the absorption of toxins. From an etiological point of view, nephritis in the newly-born may be:—

(1,) *Congestive*, from feeble circulation, congenital heart disease, asphyxia, or exposure to low temperatures.

(2,) *Obstructive*, from the physiological rapid decomposition of the blood of the newly-born; the formation of hæmatoidin—bilirubin; jaundice; the production of methæmoglobin by chemical poisons, such as potassic chlorate, or by excessive heat; or the presence of blood in the uriniferous tubes.

(3,) *Irritative*, from the presence of uric acid infarctions or hæma-

toidin infarctions, of purpuric or other interstitial hæmorrhages, or of microbes and toxins in the numerous eruptive and infectious maladies, and in enteritis.

REFERENCE.—[1] "New York Med. Journ.," No. 3, 1896.

NERVES (Surgery of the). *William Thorburn, F.R.C.S.*

A number of papers have appeared relating to the operation of removal of the Gasserian ganglion, the points principally discussed being the method of operation, the after results as regards the cure of neuralgia, and the effect upon the nutrition of the eyeball.

Most surgeons now adopt the operation known as the Krause-Hartley method, which is fully described by Keen[1] who prefers it to Rose's method on account of its smaller mortality, more ready access to the ganglion, and the facility with which the latter can be entirely removed. A horse-shoe shaped incision is made in the temporal region, one end of which is immediately in front of the ear, the other being about an inch behind the outer angle of the orbit; this incision extends upwards in a curve so as to form a flap which can be turned down, having its base on the zygoma, and including an area with a vertical extent of three inches and a horizontal width of three inches on the base. The incision is carried down to the temporal fossa of the skull, and the bone is then divided in the same line as the soft parts so as to yield flap consisting of the bone and soft parts *in situ*. Division of the skull is effected by a circular saw (Krause), or by a chisel (Hartley). The flap being turned down, hæmorrhage from the middle meningeal artery or its branches will give some trouble and must be arrested by ordinary means: if it prove uncontrollable the wound may be plugged, and the operation completed two days later. The temporo-sphenoidal lobe of the brain is then gently raised from its containing fossa and held back by a spatula; at this stage also the tearing of the dura from the bone causes free oozing of blood, and the cavernous sinus has occasionally been torn, but in either case the hæmorrhage is amenable to pressure. The second and third divisions of the fifth nerve are now recognizable by the attachment of the dura mater along their course, and the dura is carefully raised from them by blunt dissection until their convergence leads to the ganglion which is similarly cleared. The latter is firmly seized in a pair of forceps, then, and not until then, the second and third divisions are divided, and the ganglion is avulsed, its roots and its first division being torn away; the first division cannot be dissected out of the cavernous sinus. Keen holds that in this way only is the Gasserian ganglion really removed; other operators have only cut across its divisions and tried to break up or tear to pieces the ganglionic mass,

the results of such a proceeding being doubtful. Keen has thus operated in six cases of which one died "from accidental sepsis."

Doyen[2] has proposed another method of excising the ganglion through the temporal fossa. The incision is sickle shaped consisting of a vertical portion two inches long (the handle of the sickle), in front of the ear which crosses the zygoma but does not divide the facial nerve, and a curved portion (the blade of the sickle) carried forwards and including the whole region of the temporal fossa. The zygoma is resected and turned downwards and forwards, the coronoid process of the lower jaw divided and turned up with the temporal muscle, so as to expose the temporal fossa. The inferior dental and lingual nerves are found and cut, their proximal ends being held in forceps. The internal maxillary artery is ligatured near to its origin. The skull is then trephined over the temporo-sphenoidal suture, and the opening enlarged by cutting away the great wing of the sphenoid bone and the squamous portion of the temporal bone; the large opening thus made in the middle fossa of the skull is then extended by cutting away the base of the fossa up to the foramen ovale. By now following up the previously divided inferior dental and lingual nerves the third division of the fifth cranial is cleared, and traction upon it renders prominent the second division which is cleared and divided in the foramen rotundum. The first division is then traced to and divided in the sphenoidal fissure. The ganglion can now be drawn down, and its roots divided on its proximal extremity. This operation appears to be difficult of performance and two out of Doyen's three cases died, whereas, according to Krause's statistics the mortality after his operation (fifty-one cases) is 10 per cent., and after Rose's operation (twenty-one cases) 18 per cent. Its author claims for it that it does not involve the risk of injury to the brain, which is a real danger in Krause's method, and that removal of the nerve trunks is more complete.

Regarding the probabilities of curing neuralgia by excision of the Gasserian ganglion, Keen speaks very hopefully, stating that he is only aware of three recurrences after operation, one in Rose's practice, and two in his own, and that in these cases the return of the neuralgia was not severe. Unfortunately, we can hardly doubt that there are less favourable cases in which the report has appeared too early for us to be satisfied of a permanent relief. Several of Abbe's cases were reported within a few months of operation. Doyen's non-fatal case remained well after two years and a half. Genter[3] reports a case which remained well for a year, and Abbe[4] one free from relapse for three months.

Turner[5] has an interesting contribution to the experimental study of inflammation of the cornea after section of the trigeminal nerve.

Gaule has been led to the conclusion that in rabbits "trophic" changes in the cornea were due to injuries of the ophthalmic nerve or of the Gasserian ganglion, but not to lesions of the roots of the latter, and he thus located the trophic centres in the ganglion itself. Ferrier and Turner performed eighteen experimental operations dividing either the trigeminal nerve, or its roots, or the ophthalmic nerve; in all corneal anæsthesia was well marked, but two only were followed by destructive lesions of the eye. In other cases there was often a slight opacity of the cornea, but this was temporary only, and was not progressive, but is attributed to drying from imperfect closure of the lids. In both the cases in which severe keratitis developed the original wound had become septic, and the changes in the eye were therefore attributed to inflammatory irritation of the nerves rather than to section. It is insisted upon also that (clinically) keratitis is rare after operation upon the Gasserian ganglion, and it is concluded that the so-called "neuro-paralytic phenomena associated with lesion of the trigeminal nerve are evidence of irritation of the nerve and not of paralysis. This statement holds good whether the lesion is situated so as to implicate the ophthalmic branch, the nerve trunk, or the intra-medullary root"—*i.e.*, 'trophic' changes are not related to the Gasserian ganglion *per se.*

Abbe, arguing from clinical experience, holds that Turner's conclusions do not apply to man, as ophthalmitis has been seen in cases where there was no reason to suspect sepsis, and he gives good grounds for regarding it as probable that total removal of the ganglion (by Krause's method) is more dangerous to the eye than the older operation of "breaking up" the ganglion mass. In most of the reported cases no ophthalamic troubles are reported, but Abbe's experience shows the necessity for carefully protecting the cornea after operation. During the operation itself we must guard against entry of any anæsthetic or antiseptic into the conjunctival sac, and afterwards it is well to keep the eye closed by passing a few sutures through the lids or by strapping; after a few weeks all danger of keratitis appears to subside.

REFERENCES.—[1] "Amer. Journ. of Med. Sci.," Jan., 1896; [2] "Arch. provinciales de chirurgie," July, 1895; [3] "Annals of Surgery," Jan., 1896; [4] Ibid.; [5] "Brit. Med. Journ.," Nov., 1895.

NEURALGIA. *Græme M. Hammond, M.D., New York.*

The following liniment[1] has been found of great service both in neuralgia and other headaches. It is to be applied by painting it on the affected part by means of a camel-hair pencil:—

℞ Oil of Peppermint	5 parts	Camphor	2 parts
Essential Oil of Mustard	1 part	Ether	10 parts
		Rectified Spirit	30 parts

Ferraud[2] reports that compresses, wet with from 15 drops to 1 drachm of **Guaiacol** and placed over painful spots, will give almost immediate relief. The guaiacol should be pure, and must only be left in contact with the skin a short time, else it may produce a fall of temperature and symptoms of collapse.

Sabbatam[3] paints the following solution upon the painful parts :—

℞ Menthol		Absolute Alcohol	ʒv
Guaiacol	āā gr. xv		

This solution is to be painted upon the painful area two or three times in twenty-four hours, the part being covered afterward with cotton-wool. Rather less than a drachm of the solution should be used for each application.

In the "Practitioner"[4] the following preparation is highly recommended :—

℞ Amyl Hydrate	ʒj	Aconitiæ	gr. j
Collodion (B.P.)	ʒj	Veratriæ	grs. vj
	Mix.		

The mixture forms a colloid which should be brushed over the painful part five or six times, forming successive films. If there is no relief, absorption of the alkaloids may be favoured by covering the colloid film with a layer of spongiopiline.

Tic Douloureux.—Gilles de la Tourette[5] claims that in this disease neurotomy never gives lasting success. He advises the administration of **Thebaiac Extract.** The first day he gives two pills, each containing 2 centigrammes of the drug. The quantity is gradually increased until doses of 20 centigrammes are reached, then it is as gradually decreased to doses of 2 centigrammes and then stopped entirely.

Dana[6] also draws attention to the failure of surgical operations to afford relief. He cites the case of one patient who had had the Gasserian ganglion removed, and who not only suffered from a recurrence of pain, but also became insane. He had cured seven out of eight cases by giving hypodermic injections of very large doses of **Sulphate of Strychnia.** Rest in bed was enjoined during the treatment, and freedom from care. The strychnia injections were given once a day, beginning with about the $\frac{1}{50}$ of a grain, and rapidly increasing to $\frac{1}{3}$ or $\frac{1}{4}$ of a grain. The large doses had a peculiarly anodyne effect, quieting the patient for hours like morphine. Usually, the injections were discontinued after five or six weeks, but might have to be renewed once or twice again. On discontinuing it he gave **Iodide of Potassium, Nitro-glycerine,** or other drugs. (See also "Nerves, Surgery of the.")

REFERENCES.—[1] "Indian Med. Chir. Rev.," March, 1896; [2] "Therap. Gaz.," May 15, 1896; [3] "Pract.," Feb., 1896; [4] Ibid., Aug., 1896; [5] "Indian Med. Chir. Rev.," March, 1896; [6] "Med. Record," May 9, 1896.

NEURITIS. *Græme M. Hammond, M.D., New York.*

Dr. Soukhanoff[1] reports a case of peripheral neuritis of alcoholic origin, in which the columns of Goll were found to be degenerated. This case is reported in support of the view that peripheral neuritis is often followed by secondary changes in the cord. While this is possibly true in a limited number of cases, the fact must not be lost sight of that peripheral neuritis is often merely an insignificant symptom of a general systemic degeneration. This is more likely to be the case when the etiology can be attributed to long-continued alcoholic excesses, as it was in Soukhanoff's case. "The memory was bad, and there was considerable psychical change." This was probably the result of alcoholic cerebral degeneration. Connecting this condition with the degeneration in the cord and the neuritis, it is fair to conclude that the neuritis was part and parcel of the same degenerative process which was taking place elsewhere in the nervous system, and not that the cord changes were secondary and consequential to the neuritis.

REFERENCE.—[1] "Lancet," April 18, 1896.

NEUROSIS. *Græme M. Hammond, M.D., New York.*

Bernhardt[1] calls attention to a painful condition affecting the region of the external epicondyle of the humerus, and occasionally the head of the radius. It does not seem to result from any particular occupation, but is most frequently observed after long-continued use of the muscles of the affected arm. At rest, there is little or no pain, but as soon as muscular movements are attempted, the pain appears and increases if the muscular efforts are persisted in. There is no paralysis, no alteration of electrical excitability, and no trophic lesion. The writer believes that rest is essential. In severe cases he uses **Leeches, Wet Packs,** and application of **Iodine.** The prognosis is good.

REFERENCE.—[1] "Amer. Journ. Med. Sci.," May, 1896.

NOSE. (See also "Epistaxis," "Hydrorrhœa," "Nasal Stenosis," and "Ozæna.")

The following description of the applications used in the treatment of nasal affections may be useful. They are selected from an article by Dr. P. Watson Williams, which appeared in the "Medical Annual," for 1894, pages 437–447.

Synopsis.—Acute nasal catarrh of infants at breast may be relieved by spraying with 5% **Cocaine Solution** just before child nurses, or application of **Spray of Menthol,** 20% in olive oil, or syringing with **Camomile**

Infusion with a little Alum; introduction of tubes into nostrils. In chronic form Gray Powder is useful, also spraying with: ℞ Sodii Carb., gr. xv; Sodii Biborat., gr. x; Sodii Chlorid., gr. v; Aq. dest. ad ℥j. In adults, treatment of chronic rhinitis must be by general measures and local applications, *e.g.*, Liquid Vaseline containing Terebene, gr. x to ℥j; Eucalyptol, gr. xv to ℥j; with Camphor, gr. j to ij to ℥j, sprayed in night and morning. To remove crusts forcible spraying of weak solution of Soda Bicarbonate and Borax in warm water followed by the oily solution. Later a snuff may be used twice daily, *e.g.*, Sodium Chloride, ℥ij; Boracic Acid, ℥ss; Ammonium Chloride, ℥ss; Camphor, gr. j. Other solutions are Zinc Sulphate, grs. ij, or Alum, gr. iv to viij; Zinc Chloride, gr. j; Silver Nitrate, gr. ij to xv; Sodium Benzoate, gr. xxx to ℥j; Tar Water insufflations containing Nitrate of Silver, Tannic Acid, Iodol, Sozoiodol, Sanguinaria, etc. For hypertrophic form Galvano-cautery or Snare, or in slight cases, Trichloracetic or Chromic Acids may be applied after using cocaine, and the application followed by daily cleansing with: ℞ Sod. Bicarb., grs. x; Sod. Biborat., grs. x; Tinc. Benzoin Co., ♏ x; Glyc., ♏ xx; Aq. ad ℥ij. This is followed by insufflation of a powder, *e.g.*, ℞ Ac. Boracic. gr. iij; Sod. Chlorid., gr. ½; Bismuthi Subcarb., gr. ½; Morph. Acet., gr. ⅛. For atrophic form all crusts must be sprayed away with such a lotion as Dobell's or simple warm water with a little Bicarbonate of Soda or Sanitas added, and to restore function of the membrane a spray of 1% solution of Iodic-hydrarg. is useful, but hypodermic injection of Morphia is required to allay pain. Faradic Current, Internal Massage. In atrophic rhinitis watery astringent solutions, *e.g.*, Peroxide of Hydrogen, 10 to 20%; Mercuric Bichloride, 1 to 4000; Boric Acid, Potassium Permanganate and Carbolic Acid may be used, but by means of post nasal spray. Mild astringents, 2 or 3 grs., to ℥j of Silver, Copper, Zinc, Tannic Acid, or Iron may be used similarly. Stimulating disinfectants, *e.g.*, Listerine, Thymol, Menthol, Eucalyptol, Oil of Wintergreen, etc., cleanse and comfort dry congested surfaces.

NOSE (Syphilis of the). *P. Watson Williams, M.D. Lond.* (*Bristol*).

The *clinical appearance* of a *primary* syphilis attacking the interior of the nose usually varies according to the age of the patient. In young children, the sore frequently appears and runs its course as a simple papule without induration (Massei). In the adult too, it may in the beginning appear as a benign ulceration, but in this class it soon becomes indurated, and in both classes interference with respiration becomes a prominent symptom. In Rassori's case there was intense frontal headache. In Watson's case there was elevation of temperature and great swelling of the interior of the nose. Moure's case showed an unusual proneness to bleed. Otherwise chancre of the nose, as well as the subsequent course of the disease, does not differ from syphilis attacking other regions of the body. The indolent swelling of the submaxillary and sublingual and pre-auricular glands, when found, renders valuable aid in diagnosis.

Secondary syphilis manifests itself in the nose as (*a*,) erythema, (*b*,) condylomata, (*c*,) secondary ulceration.

(*a*,) Erythema consists of hyperæmia of the mucous membrane, with swelling of the submucous connective tissue. It manifests itself in the earliest stage as a catarrh (coryza syphilitica simplex). Attacking adults, it is often overlooked. In infancy it is of the greatest importance. In by far the greatest number of cases the objective and subjective signs differ only slightly from those observed in simple acute catarrh. The hyperæmia of one is difficult to distinguish from that of the other. But there is this difference in regard to syphilitic coryza: the onset is less violent, is more gradual, and the secretion, especially in the first stage, is not so profuse, but when established lasts longer than in the simple acute catarrh. Disseminated patches of well-defined erythema may be seen, especially on the septum, and on these may develop the plaques, which are the first pathognomonic signs of syphilis. While, as regards the nose, the diagnostic value of syphilitic erythema is not conclusive, the syphilitic erythema of the pharynx, with its depth of colour, its sharp definition, and the strikingly healthy appearance of the surrounding mucosa, is sufficiently peculiar to warrant us in regarding it as characteristic.

(*b*,) *Condylomata* appear in the nose much less frequently than in the mouth, the isthmus faucium, lips, cheeks, tongue or tonsils. Indeed, according to many observers, it is only in exceptional cases that they are met with in the nose. Michaelson, whose classical work on the subject is well known, has seen them several times in the vestibulum nasi, but nowhere else in the nose. Siefert gives the same experience. Pierce has personally seen six cases of superficial erosions in the vestibule which were doubtless condylomatous in origin, and in one case circumscribed plaques along the inferior turbinated body. Davasse found them within the nose only eight times in one hundred and eighty-six cases; Bassereau twice in the vestibule in one hundred and ten cases. They occur by far most frequently in this locality. The condyloma as seen on the pituitaria varies somewhat from those seen on other mucous surfaces. Here they are only slightly elevated, are less prominently marked, and resemble circumscribed thickenings of epithelium. Pierce believes that we receive this peculiar impression more from the oblique direction in which our reflected light strikes the plaques within the nose than from any real difference in the plaques themselves. They have a strong tendency to ulcerate and secrete actively. But usually when a condyloma ulcerates the ulcer is superficial, presenting a loss of only the layers of epithelium, of which the bases may be covered by exuberant granulations. In only rare cases do these ulcerations penetrate to greater depths. They are usually surrounded by a zone of deeply injected tissue.

Late Syphilis.—Syphilis in its late or granulomatous form, when invading the nose, assumes an extraordinary importance when we have regard to the cases of frightful and hopeless deformity. The time of onset of late syphilis of the nose is, according to Michaelson's statistics, from one to three years after infection. In five of the authors' cases in which the data upon this point was ascertained, the time elapsing varied from one, four, thirteen, seventeen, and eighteen years after infection. It may begin with the abrupt symptoms of sudden onset, or its commencement and course may be marked by the utmost subtlety.

Diagnosis.—The process which most resembles the syphilitic is the tubercular. In many cases the diagnosis is beset with great difficulties, especially if we have to depend upon local appearances alone. The shape of the syphilitic ulceration of the septum is, in the large majority of cases, longitudinal, while the tubercular is usually round or irregular in form; but we may have a circumscribed gumma in the nose which results in a round ulcer, and we have tubercular ulcers which are longitudinal. These are, however, rare, and occur with greatest frequency on the turbinated bodies. The syphilitic infiltration spreads beneath the mucous membrane or within or between the perichondrium and cartilage, causing necrosis of large areas of bone or cartilage in a very short time. This never occurs in tuberculosis (Siefert). The tubercular perforations of the septum take place gradually. The tubercular granulations slowly take the place of the osseous tissue. Then, too, the nasal tubercular manifestations are in the large number of cases preceded by the same disease on the face. The age of the patient is of some value, nasal tuberculosis occurring most frequently in the young. We may examine pieces of excised tissue under the microscope to ascertain its histological structure or for the presence of bacillus tuberculosis, or we may make injections of scrapings into the anterior chambers of the rabbit's eye. The local appearance of leprosy and anthrax may resemble those of syphilis, but the general appearance of the several diseases are so distinct that I shall not treat of them. It may be difficult without microscopic examination to differentiate the primary and some late syphilitic manifestations of the nose, especially of the alæ, from malignant disease. Then we have the mixed infection of tuberculosis or leprosy with syphilis, and of carcinoma developing on a syphilitic base or scar. This makes the diagnosis extremely difficult in many cases, and requires the greatest skill and experience on the part of the diagnostician. In all cases of doubt the balance of the mucous membrane covering the upper air-passages should be carefully inspected, and especially is this so regarding the post-nasal space, for

it is this area that is most frequently the seat of late syphilitic manifestations. In all ulcerative processes within the nose a history of syphilis should be carefully sought for as well as syphilitic manifestations in other portions of the body, which may exist at the same time. Failing this, we are not justified in regarding the process as non-specific, if there be bone necrosis and a sequestrum, but should at once institute specific treatment. In certain cases some difficulty may be experienced in differentiating between necrosing ethmoiditis and syphilis of the middle turbinated body when the latter disease is confined to that region. The slow course, the absence of slough, the typical "fissure," the relative smallness or absence of the sequestrum in necrosing ethmoiditis, are distinctive features which should prevent us from making a mistake. In case of trophic ulceration within the nose occurring in the course of bulbar tabes we have the general nervous symptoms to guide us in reaching a correct diagnosis.

TREATMENT: *Prophylaxis.*—All persons coming in contact with syphilitics, such as attendants, servants, etc., should be instructed as to the possibility of their becoming infected, and preventive measures observed. Actual treatment is constitutional and local, and one is as important as the other. It is quite true that light manifestations in the nose may disappear under constitutional and without local treatment, but even in these cases the annoyance of the nasal symptoms are allayed and healing hastened by topical treatment, and in all cases the dangers are diminished by local applications. There are other cases that do *not* recover under constitutional treatment alone. The immediate disappearance of the intolerable stench upon the removal of a sequestrum is a nice example of the beneficial results of local measures.

In selecting the constitutional remedy, the author states that he is guided largely by the rules which were formulated by Massei: (1,) **Mercury** (*a*,) in secondary manifestations, (*b*,) when the patient has not had a thorough mercurial course, (*c*,) when the iodides are not borne; (2,) **Iodides** (*a*) in the tertiary forms, (*b*,) when the patient has had a thorough mercurial course, (*c*,) when this is found to be without effect; (3,) Mixed treatment (*a*,) in the more grave forms, and when the mercury is not active enough; (4,) Internal administration of mercury in the ordinary lighter forms, inunctions or hypodermic injections in those cases where the internal administration is badly borne, or when the disease threatens extensive destruction.

In those cases in which the iodides are indicated and the potassium salt is not borne, we may substitute the iridium salt with safety. Pierce commends an ointment for inunctions in which the metallic mercury is replaced by **Calomel.** It is made in the same way as the

gray ointment, except that lanoline is used instead of lard. It makes a much more elegant preparation and is almost equally efficacious.

Local Treatment.—Cleanliness is one of the most important factors in all nasal therapeutics, but in nasal syphilis it becomes *primus inter pares.* Each time the patient is seen by the rhinologist, the nose, in its every part accessible, should be carefully cleaned by means of cotton pledgets carried on applicators, under illumination. The patient should douche the nose at home from two to three times daily. The drugs suitable for nasal irrigation in syphilis are numerous. In the simple specific coryza the solution should be merely bland and alkaline. It should be cleansing only, and mildly antiseptic. For this purpose use equal parts of a powder consisting of **Bicarbonate, Biborate,** and **Chloride of Sodium.** As much of this as may be held on the point of a penknife blade is dissolved in as much warm water as will fill the douche cup. One half of the contents of the receptacle is poured into each nostril by the patient. At the same time the head is thrown back slowly, and the patient says a long-continued "Ah" in order that the solution may not get into the pharynx. In the same way we may use a 1 per cent. solution of bicarbonate of sodium. If there is a good deal of discharge, which has a tendency to decompose or desiccate, we may use a 1 per cent. solution of **Salicylate of Sodium,** or a 2 per cent. solution of **Salicylic Acid,** or a 1 to 2 per cent. solution of **Carbolic Acid** by means of a gravity douche, provided there is ample room for escape of the solution from the nose; otherwise it is better to depend upon the nasal bath, carried out by means of the cup shown in the cut (*Fig.* 41). If there is ulceration or odour, or if for any reason the parts need a stimulating douche, we may use ʒj—ij of a 50 per cent. solution of **Aceto-tartrate of Aluminium** to a pint of warm water. The corrosive-sublimate solutions are not fitted for use in the nose.

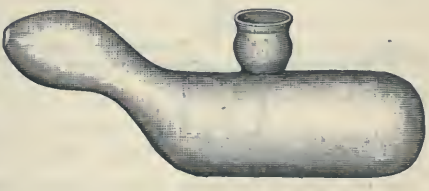

Fig. 41.

They are too irritating when they are used strong enough to be of practical antiseptic value, and for cleansing purposes they are not only inefficient, but are deleterious on account of the property which they possess of forming a tenacious insoluble albuminate of mercury with the mucous and pathological secretions of the nose. **Aqua Picis** is a most excellent wash when it is necessary to frequently repeat the douche. It is not only an effective deodorizer, but its repeated application

is not followed by gastric disturbance. The same cannot be said of carbolic acid, or even of salicylic acid.

The cleansing of the infantile nose is an important matter. Here desiccation occurs with greater rapidity than in the adult nose, and, as the lumen is small, occlusion sets in very soon. We must be careful to keep the air-way clear, or the nourishment of the suckling will be interfered with. It is well to cleanse the nose as often as the infant is fed. Just before each feeding a drop or two of warm liquid vaseline is dropped into each nostril. This has the effect of loosening the scabs, thus facilitating their removal. Their actual removal may be accomplished in several ways: by means of the air douche or the politzerization, or by means of the fluid douche, or the cotton pledget. The air douche is very simple in its administration. If the child cries it only aids in the operation by closing off the post-nasal space from the pharynx by elevating its palate. Thus the scabs and discharges are forced from one nostril into and out of the other. Occasionally they are forced into the pharynx and then swallowed. This furnishes one of the greatest objections to this mode of cleansing. Notwithstanding this, the air douche is the most convenient, and as effective as any other means of cleansing the infantile nose. The fluid douche, *i.e.*, syringing, is difficult of accomplishment in the infant, and in the struggle that is bound to ensue the nose may be more or less injured, even with a blunt nose-piece to the syringe. It may become imperative to free the nose from the obstructive matter, and the air douche may have proved futile. In such cases the dry cotton pledget is to be depended on. If necessary the whole of the obstructing mass may be forced into the pharynx, whence it may be removed by the forceps, expelled by the infant, or the infant may swallow it—an occurrence not to be sought, but, having occurred, not to be too much deplored. Once it is thoroughly cleansed, it is comparatively easy to preserve a good degree of freedom from accumulation in the nose by means of the fluid vaseline, the cotton pledget, and the air douche. For local treatment in the infant Pierce has used mercurial fumigation by means of the nasal fumigator, with satisfaction (*Fig.* 42).

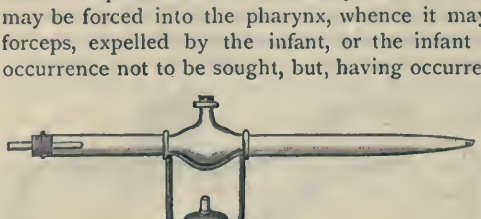

Fig. 42.—The nasal fumigator. Calomel is placed in the porcelain receptacle. The alcohol lamp below is lighted, and as soon as the fumes from the calomel are liberated they are blown into the nostril by means of the breath, or a double balloon.

With infants whose nasal mucous membranes are the seat of

secondary ulceration, the spray composed of the following ingredients is found beneficial and acceptable to the patient:—

Iodoform	1	Albolene	50–100
Sulphuric Ether	10		

This combination is serviceable also in cases of simple syphilitic coryza in the adult. Or when there is extensive secondary ulceration we may use an ethereal solution of iodoform (1 to 3), but in many cases the odour is objectionable.

For the treatment of plaques and secondary ulcerations on the mucous membranes of the upper respiratory tract, nothing has given Pierce such satisfaction as the mitigated **Nitrate of Silver.** In tertiary indurations which have not ulcerated, the daily application of a 10 per cent. **Iodo-glycerin Solution** over the affected area hastens the resorption of the granuloma.

In tertiary ulcerations we should first remove all fungoid excrescences. Indeed, it is good routine practice to always scrape tertiary ulceration in the nose before beginning local medication. The galvano-cautery is not recommended for such purposes, because it is too violent in its action and tends to destroy tissue that might reform; 10 per cent. **Iodo-glycerin, Iodol,** and 10 per cent. **Nitrate of Mercury Solution,** are all of value in the treatment of ulcerations of this kind. Sequestra should be removed; but in the removal we should be careful to do as little injury to the nose as possible. It is seldom that the immediate removal of sequestra is imperative. In the case of large pieces, the removal of which would necessitate the laceration of the surrounding tissue, it is better to wait until their size has been reduced, or to crush them in smaller bits by means of the forceps. For the purpose of reducing the size of such sequestra we may employ irrigation several times daily with 1 per cent. solution of **Dilute Hydrochloric Acid,** or we may use the **Electro-cautery** for the purpose of desiccation of the sequestra, as advised by Voltolini. We should always be careful to prevent synechia when we find it possible.

The contribution of Pierce on nasal syphilis is very practical and valuable, and thus as it covers so well the whole ground of semeiology, pathology and treatment, I have quoted it at great length.

REFERENCE.—"New York Med. Journ.," Nov. 30, 1895.

ŒDEMA (Angio-Neurotic).

An article upon this subject appeared in the "Medical Annual" for 1895, by Dr. W. Ramsay Smith. The following is the prescription most frequently useful:—

℞ Acidi Arseniosi	gr. $\frac{1}{60}$	Pilulæ Ferri Bromidi	grs. iv
Ergotini	gr. j		

Fiat pilulas. Tales 48. Sig.—One three times daily after food.

ŒSOPHAGUS (Foreign Bodies in). *Priestley Leech, M.D., F.R.C.S.*

Dr. H. M. Silver,[1] in a paper on this subject, reports several cases, and comes to the following conclusions: The best instrument for exploration is a *bougie à boule*, provided with several sizes of bulbs and with a metal stem having graduations by which the surgeon can tell the exact distance of the body from the upper incisor teeth. If the foreign body is thirteen inches or more from the incisor teeth, gastrotomy is the proper operation; if less than thirteen inches, œsophagotomy. It is dangerous to attempt to extract or push down small angular bodies with jagged edges.

Dr. George Fischer has shown that out of twenty-eight deaths, eighteen had been caused by conditions which were preventable.

Suturing the œsophageal wound was not essential, and if the foreign body had been long impacted, or if the œsophageal wall was infiltrated, ulcerated or gangrenous, it should be left open.

The external wound should never be completely closed, but carefully packed with iodoform gauze. No food should be given for the first twenty-four hours; after this time liquid food might be given through the mouth, and its escape through the wound could for the most part be prevented by the application of a cotton compress during the act of deglutition.

The mortality of œsophagotomy in one hundred and sixty-five collected cases was 23 per cent. The causes of death were starvation, perforation, and abscess, secondary hæmorrhage, and pneumonia.

Dr. John B. Roberts[2] reports a case of œsophagotomy for cicatricial stricture in a boy three and a half years old. The stricture was a long narrow one, and he opened the œsophagus below the lower end of the stricture. An opening was made above the stricture, and an attempt was made to dilate the stricture between the two, but in vain. The child died on the sixteenth day. The wound had become septic, and there was suppurative inflammation in the posterior mediastinum.

A simple method, and one that is said to be effectual in removing foreign bodies in the throat, is as follows[3]: The patient is given a pint of milk, and forty minutes afterwards an emetic of sulphate of zinc. The fluid passes easily, and is coagulated in the stomach into a more or less solid mass, which on being ejected forces the obstruction before it.

REFERENCES.—[1] "New York Med. Journ.," Dec. 21, 1895, and "Med. Record," Oct. 26, 1895; [2] "New York Med. Journ.," Nov. 16, 1895; [3] "Med. Record," Nov. 9, 1895.

OPHTHALMIA NEONATORUM.

Thomas More-Madden, M.D., F.R.C.S., Dublin.

Kostlin[1] contributes an extensive paper upon the value of **Credé's Method** for preventing this disorder, in which he quotes the results obtained by various obstetricians. He concludes from his study of the subject that statistics show that in the very beginning of ophthalmia it is almost impossible to distinguish it from a simple catarrhal conjunctivitis. The superiority of Credé's method over the use of vaginal douches is made evident by the reports of cases. Some patients are seen in whom the eyes of the fœtus became infected during the very process of labour. The late appearance of the disease, sometimes known as secondary infection, is thought to be a primary infection with a long stage of incubation. It is possible for a genuine secondary infection to occur, although it rarely happens. No unfavourable results are reported from the use of Credé's method, and affections of the cornea which has been protected, have not been seen, nor have the symptoms of great irritation developed which have been feared by those employing the method. The eyes of the children so treated are not more sensitive to a later infection. The feasibility of the method in the hands of midwives and physicians especially recommends it. The question of making the use of nitrate of silver obligatory is a difficult one to solve. This is scarcely possible without seriously infringing upon the rights of someone. Any effort to make a method of treatment binding upon all must in some degree interfere with personal rights. The most that can be done in the matter of regulation is to insist that midwives shall at once report to a physician any case of purulent conjunctivitis which they may see.

REFERENCE.—[1] "American Journal Med. Sciences," June, 1896.

OPTIC NERVE (Atrophy of the).

G. E. de Schweinitz, M.D.,
Clarence A. Veasey, M.D., } *Philadelphia.*

Galezowski[1] recommends the use of **Phenate of Gold** internally, in the form of hypodermic injections, for *optic atrophies*. In *tabes* the atrophy is said to be arrested under their influence.

REFERENCE.—[1] "Annales d'oculistique," Jan., 1895.

OSTEOMYELITIS. (See "Vertebræ.")

OVARIES (Surgery of). *Theophilus Parvin, M.D., Philadelphia.*

Delange[1] reports the results of his conservative operations on the ovaries, pregnancy subsequently occurring in 30 per cent. of the cases. At the same time he does not believe that the possibility of the patient's afterward conceiving is the main object aimed at.

Donnef[2] thinks that **Resection** or **Ignipuncture** is indicated in the case of every young woman who presents evidences of chronic oöphoritis associated with a healthy condition of the uterus and tubes. When the uterus is diseased, or the patient is near the climacteric, hysterectomy is preferable.

Mathaei[3] reports six cases of ovariotomy in which partial disease of the opposite ovary was found. As the patients were young women, only the macroscopically diseased portions of the ovaries were excised, the raw surfaces being united by sutures in the usual manner. Five out of the six patients subsequently conceived and bore living children. The writer recommends this procedure in all cases of ovariotomy in which the opposite ovary contains retention-cysts too large or too numerous to be treated by ignipuncture, or even when a small dermoid cyst is present not involving the entire ovary. Exceptionally healthy stroma may be preserved in the case of a small proliferating glandular cystoma. If the patient has passed the climacteric, or there is a suspicion of malignancy, the ovary should be entirely removed.

Malthe,[4] of Christiania, has performed ovariotomy one hundred and fifty times, with only three deaths, and one of the fatal cases was a patient who was moribund at the time of the operation. He believes in asepsis, and also recognizes good in the antiseptic method. In any case he absolutely condemns irrigation of the peritoneal cavity, whether with antiseptic solutions, or with sterilized waters. He always used chloroform, believing it less dangerous than ether.

Dr. T. Morris[5] not only suggests the utility of an ovarian graft in certain cases, but has recorded two instances in which this operation was beneficially done by him: The one was a young unmarried woman "with infantile uterus and rudimentary adnexa." She "received an ovarian graft of another patient. Two months later she menstruated for the first time." The other was a married woman aged twenty-six; the remnants of ovaries and tubes—after long-standing disease—were removed, and a small piece of her own diseased ovary was transferred to the interior of the stump of one oviduct. The patient became pregnant a month later, etc. Such are the cases—to the incredulous they may not appear of much importance, but to others they seem to open up a wide field for operative interference. There are, for instance, many women who have undergone mutilation who would be glad to have ovaries of some sort once again, and possibly the mother of many children in the kindliness of her heart would spare a portion of an ovary to enable her barren sister to taste the joys of maternity.

Curatolo[6] observes as the result of his investigations, that by removal of the ovaries the oxidation of fatty tissue is hindered. He, therefore, concludes that in the ovaries a secretion is prepared which promotes the oxidation of fat and phosphorus compounds.

Sänger[7] has twice done an operation for prolapse of the ovary, calling it pelvifixura ovariorum. He replaces the uterus, after freeing the adhesions which retain it in a fixed, posterior position, and passes a silkworm-gut suture through the uterine tissue close to the cornu on each side. The two sutures are passed through the parietal peritoneum below the level of the abdominal wound, and as near as possible to the bladder. Then the tube and ovary are drawn up on one side. Two or more fine silk sutures are passed, either through the meso-salpinx close under the ampulla of the tube, or through the infundibulo-pelvic ligament immediately behind the ovarian fimbria. A piece of the peritoneum on the wall of the bony pelvis at the level and immediately in front of the outer origin of the infundibulo-pelvic ligament is raised into a fold with forceps. The silks are passed through this fold; then they are tied. The opposite appendages are treated in the same manner. Thus both are brought back to their right level; the pain and congestion of the ovaries due to prolapse is cured. Sänger asserts that the mobility and blood-supply of the ovaries are in no way disturbed by this operation of pelvi-fixation of the ovaries.

REFERENCES.—[1] "Arc de Toc. et de Gyn.," No. 3, 1894, and "Amer. Journ. Med. Sci.," Jan., 1896; [2] "Centralbl. für Gyn.," No. 33, 1895, and "Amer. Journ. Med. Sci.," Jan., 1896; [3] "Zeitsch. für Geb. u. Gyn.," Bd. xxxi., Heft 2, and "Amer. Journ. Med. Sci.," Jan., 1896; [4] "Brit. Med. Journ.," Jan. 18, 1896, from "Journ. d'accouchments"; [5] "Quarterly Medical Journal," Jan., 1896, from "New York Medical Journal"; [6] "Gaz. hebdom. de méd. et de chirurg.," 1896; [7] "Centralb. f. Gynäkol," No. 9, 1896.

OZÆNA (Atrophic Rhinitis).

P. Watson Williams, M.D., Lond. (Bristol).

Many are the theories advanced as to the etiology and pathology of ozæna; thus Zaufal attributed its occurrence to a congenital deficiency of the turbinated bones, with resulting undue patency of the nasal passages. Berliner, on the other hand, believed that it results from pressure of the middle turbinal against the septum, with consequent defective secretion. It has been held to be the consequence of atrophy and degeneration of the acinous glands and Bowman's glands. Some rhinologists have urged that atrophic rhinitis is usually due to disease of the accessory sinuses.

My own observations lead me to conclude that none of these

theories are sustained by clinical evidence. The disease presents this peculiarity: that it is very much more frequently encountered in young females, especially chlorotic girls. It appears very frequently about the age of puberty, and in young adolescents, and the symptoms are generally aggravated during menstruation. The disease tends to persist during the period of sexual activity, and to subside at the climacteric. While it may be immediately due to some micro-organism, I think there is much to support the view that it is intimately associated with sexual development, like some forms of acne. I do not, however, fail to recognize that there is a considerable percentage of cases in which the sexual element can have no causal influence, and that if the term ozæna is simply used as a clinical term including all forms of atrophic rhinitis with retained fœtid secretion, the number of cases in which the cause of the disease is syphilitic disease, suppurative sinusitis, etc., will not be inconsiderable.

Ozæna, in spite of its presumable microbic nature, does not seem to be contagious. An explanation of its occurrence among several children of the same family is found in hereditary tendencies, and resulting similiarity of constitutional condition. Inoculations upon animals, both by the lymph-channels and by the blood-vessels, give very positive effects. Mice, under whose skin was injected ¼ or ½ c.c. of a fresh culture of ozæna germs, died in twenty-four hours. There was an œdema or induration at the site of inoculation. The lungs and the organs in general were healthy, but the blood contained the cocco-bacilli in large numbers. Guinea pigs were killed by intra-peritoneal injections, and presented the same lesions as mice. Rabbits suffered malaise, but were not killed. Fage[1] has not found the microbe in the blood of patients examined with reference to this point, but its action upon inoculated animals show us that we are in the presence of a pathogenic germ. He therefore believes that we should study the affection not only as a local lesion, but also as a local expression of a general systemic condition. The germ can propagate itself by continuity of tissue, as it has been found in the pharynx and in the conjunctival *cul-de-sac*.

It is claimed by Belfanti and Della Vedova[2] that ozæna is caused, not by the bacillus mucosus ozænæ, but by an attenuated type of diphtheritic bacillus.

TREATMENT.—A number of cases were treated by Belfanti and Vedova with injections of **Diphtheria Antitoxin**, and in half of them the fœtor disappeared, turgescence of the mucous membrane, and a fluid consistency of the nasal secretions occurring. Many injections seem to be necessary—in one case it was repeated thirty times.

In discussing the observations of Belfanti and Vedova, Prof. Bozzolo stated that he had adopted this treatment in some cases of ozæna, benefit being observed in two. Prof. Gradenigo[3] employed this serum treatment in sixteen cases, five of them having been diagnosed bacteriologically by Belfanti. All the cases were improved, but none cured; this Gradenigo ascribes to the insufficiency of the dose employed. He confirms the specific elective action of the serum on the diseased nasal mucous membrane.

Vansant[4] recommends the following as a douche in ozæna:—

℞				
	Sodium Bicarbonate	1 oz.	Camphor	60 to 90 grns.
	Sodium Borate	1 oz.	Carbolic Acid	60 to 90 grns.
	Sodium Choride	1 oz.		

Mix. Add ½ a teaspoonful to a cup of warm water, and use through the nose according to directions.

While the nasal douche is not without danger in its use, especially in cases of infectious disease, its dangers have been over-estimated at times. Properly employed, that is to say, injecting the fluid, previously warmed, without force, and taking care not to inject it up one nostril while the other passage is blocked, it is often of very great service, and in ozæna is essential. Mink[5] states that it is also dangerous to blow the nose directly after the use of the douche. He uses a spray.

Bischof[6] observes that otitis media following the nasal douche may be avoided by attention to the following points: The douche must not be at too high pressure, nor too prolonged; no swallowing or coughing to be allowed during douche; head to be slightly inclined forward; douche to be administered through the narrower of the two nostrils; nose not to be blown in the ordinary manner just after douche, but patient to close one nostril while he blows out through the other; fluid used to be at first luke-warm, then gradually cooler; nozzle of douche not to fit the nostril tightly; cotton-wool to be worn in the ears after the douche.

MM. Lermoyez and Helme[7] believe that the boracic acid solutions used ordinarily for nasal douches are of little value. Sublimate solutions, even if weak, are badly borne by the pituitary membrane, and as much may be said of weak carbolic solutions. The authors recommend the use of **Phenosalyl** in a solution of 1 in 1000, a little sodium chloride being added. Insufflation of **Aristol** and **Iodol** in powder is also useful.

REFERENCES.—[1] "Rev. Internat. de rhinol.," Oct. 1, 1895, and "Amer. Med. and Surg. Bull.," Jan. 11, 1896; [2] "Gaz. med. di Turino," April 2, 1896, and "Journ. Laryngol.," June, 1896; [3] "Hospital," Sept., 1896, and "Arch. ital. di otol.," iv, No. 2, 1896, and "Journ. of Laryngol.," June, 1896; [4] Phil. College, Feb. 22, 1896; [5] "Med. Weekblad Nederland,"

May, 1895, and "Quar. Med. Journ."; [6]"Therap. Monat.," Sept., 1895, and Epit., "Brit. Med. Journ.," Nov. 2, 1895; [7]"L'Union méd.," No. 37, 1895, and "Quart. Med. Journ.," Jan., 1896.

PACHYDERMIA LARYNGIS.

Potass Iodide internally. Local applications of solutions of **Iodine** or **Lactic Acid, Salt Water** or dilute **Acetic Acid.** Electrolysis, or the application of Leiter's coil over the larynx.

PANCREAS (Surgery of). *A. W. Mayo Robson, F.R.C.S.*

Acute Pancreatitis, though a rare disease, is extremely important, since it presents symptoms akin to those of acute intestinal obstruction, or even those of irritant poisoning. The cases reported by Dr. Rolleston[1] and by M. Caley[2] are well worthy of study. Fitz[3] made a careful summary of the cases previously reported of acute pancreatic disease, collecting altogether seventeen instances of hæmorrhagic, twenty-two of suppurative, and fifteen of gangrenous pancreatitis, besides sixteen cases of hæmorrhage into the pancreas. He came to the following conclusions: The disease represents a serious complication of what, by itself, is a relatively simple affection, viz., gastroduodenitis; it is an important cause of peritonitis, and one readily overlooked; it has been repeatedly confounded with acute intestinal obstruction and has thus led, in several instances, to an ineffective laparotomy, an operation which, in the early stages of this disease is extremely hazardous.

The youngest case of acute or hæmorrhagic pancreatitis hitherto recorded was at the age of twenty, but in the "Canadian Practitioner," for September, is an account by Dr. McPhedran of a case in a boy, aged nine months. The symptoms resembled those of intussusception, and laparotomy was performed; the true cause was found *post mortem.*

Rupture of the Pancreas.—Leith[4] has given careful study to the literature of rupture of the pancreas, and reports some cases. His first group includes those in which a fatal issue followed early upon injury; the symptoms were shock and collapse, and in no case did they point to the pancreas as the main seat of lesion. The absence of external lesions of the abdomen is important and not a little surprising. Diagnosis is impossible without laparotomy, although the nature and direction of the violence and the exact site of impact make a suspicion of the lesion possible. The anterior surface of the pancreas can be thoroughly explored by a vertical incision about three inches long, in the middle anterior line, or preferably a little to its left, in the epigastric region. If an electric lamp be placed in the interior of a Ferguson's speculum, both the organ and its covering peritoneum can be scrutinized.

Death is usually due to hæmorrhage. The lesion is rarely the only one present ; and since diagnosis is impossible, treatment must be expectant or must be founded upon an exploratory laparotomy. In case the latter operation has been performed, the hæmorrhage may be arrested by pressure, and the ruptured ends brought close together by comparatively superficial sutures passing through little more than the peritoneal covering of the gland. The covering adheres so closely to the gland without the intervention of any fatty or other tissue that it is easy to bring the separated ends together by traction exerted alone upon the peritoneum. This procedure is, however, open to the objection that blood or pancreatic juice might collect between the ends and cause their separation again, and lead perhaps to cyst-formation or other trouble. Senn, from his experiments on animals, recommends that the ends of the ruptured gland be separately ligated previous to such suturing. This has the advantage of effectually arresting the hæmorrhage and the outpouring of the pancreatic juice, and, further, the close approximation of the ends favours the rapid establishment of the nutrient vascular supply. He would first remove the necrosed portions of the gland. He found that ruptures treated in this way quickly healed, and that there was no danger to be apprehended from the distal part of the gland, as all such physiologically separated portions underwent simple atrophy and in no case led to cyst-formation.

The milder cases of pancreatic rupture may, and probably usually do, recover. Certainly autopsies prove that this result may occur. As a matter of clinical history it is well understood that after injury received in the epigastric region there may follow after a considerable interval of time a cyst in this region. Indeed, the large proportion of pancreatic cysts are held to be of traumatic origin, and a table of seventeen such is given. The earliest tumour appeared ten days after injury, the latest eight years. As to the method of forming these cysts, the following is Cathcart's explanation : " The injury causes a laceration of the gland. This is followed by extravasation of blood, and with this is mixed the pancreatic secretion from the torn ducts. Not only is a constantly increasing fluid thus added to the original hæmatoma, but the collection of fluid probably becomes irritating in character. It will thus tend to excite the formation of a capsule around it, and by chemical irritation and tension would gradually increase in size."

Experience has shown that aspiration is both ineffectual and dangerous. The cyst gradually re-fills, and attempts to secure its obliteration by means of the injections of iodine, etc., have been some-

what disastrous. A fatal peritonitis has resulted more than once; indeed, the simple aspiration itself has been followed by somewhat similar serious consequences, brought about doubtless by the rupture of the cyst-walls when thin, and the sudden escape of the contents into the peritoneal cavity.

Aspiration has thus been abandoned in favour of laparotomy, which is the favourite method of treatment at the present day. The cyst is brought forward to the anterior abdominal wall, incised, and emptied. Drainage is secured by means of a pancreatic fistula, which discharges for a variable time and then heals. This was the method employed in the seventeen recorded cases of traumatic cysts, in all of which except one it was successful. It has been followed with like success in many other cases. Krecke says that out of twenty-seven cases treated by section and drainage, all recovered; and out of six cases treated by dissecting out the cyst, three died. The advisability of this is very doubtful. Excision may be easy in some cases, but will be difficult in most, and experience does not favour its recommendation.

The method of anterior incision and drainage, notwithstanding its success, is not altogether perfect. It has actually failed to cure in a few cases, and other objections may be urged against it. It is much more suitable for the somewhat movable cysts which come forward to the anterior abdominal wall. These are generally broader anteriorly than posteriorly, and are thus readily opened from the front. It is not nearly so suitable for that other division, which is somewhat sessile, broader posteriorly than anteriorly, and much less movable; this is not easily reached by an anterior incision, and, moreover, it is by no means easy to bring the wall of such a cyst forward to the anterior incision and thus to secure its safe evacuation. In addition we have to urge the obvious disadvantage of the anterior incision, alike for men and women, in so far as it interferes with the natural usefulness of the abdominal wall and provides for a drainage of the most imperfect character, allowing of a cure only after a more or less protracted period. Further, the possibility of the pancreatic fistula becoming permanent must not be entirely denied. Senn in his experiments found that it never occurred, but actual experience in the human subject does not quite bear this out. Gould, indeed, mentions a case in which not only did the pancreatic fistula remain permanent, but malignant disease appeared around it. It appears to be not only reasonable, but most advisable, that we seek for some method of reaching these cysts which shall be free from these objections.

Cathcart and Littlewood have spoken of the ease with which a counter-opening could be made posteriorly, and in one instance I

drained a case of this kind through a lumbar incision with great facility. This method of reaching these cysts was adopted by Mr. Cotterill with complete success in a case under his care. He entered the sac below the renal vessels. The patient is doing well. Others have adopted a posterior incision after an anterior one had failed. Thus, Gould mentioned that in a case where the cyst was fixed and could not be brought to the surface; with a finger in the cyst he cut down behind below the twelfth rib and drained it posteriorly. The fistula rapidly closed. A better proof could hardly be given of the advantages of the posterior incision. He would doubtless have easily reached the cyst had he tried the posterior incision at first. He would strongly advocate this method of procedure, not only because of its ease, but because of the advantages of a posterior over an anterior incision, and of the more perfect drainage and much more rapid convalescence and cure which it promises. Even if it were to fail to reach the cyst, it would in no way prejudice the success of an anterior exploration, and would, moreover, even in such a case allow the rapid establishment of posterior drainage.

REFERENCES.—[1] "Lancet," March 14, 1896; [2] "Brit. Med. Journ.," July 4, 1896; [3] "Medical News," Feb. 23, 1889; [4] "Edin. Med. Journ.," Nov. 1895, and "Therap. Gaz.," March, 1896.

PARACENTESIS SPINALIS. *William Thorburn, F.R.C.S.*

During the last twelve months many articles have appeared, principally in America and on the Continent, upon the value of lumbar puncture of the medullary sheath, an operation advocated by Quincke and Ziemssen some four years ago, and described in a previous issue of the "Medical Annual."

Jacoby[1] refers to the early work of Quincke, Ziemssen, Lichtheim, and Fürbringer and to his own experience which, extending over a period of six months, included thirty-five cases, in many of which he made multiple punctures. He employed the operation for both diagnostic and therapeutic purposes. The anatomical basis of lumbar paracentesis is the continuity of the spinal and cerebral subarachnoid spaces and of the cerebral ventricles, together with the fact that in adults the spinal cord extends down to the second, and in children of a year old to the third lumbar vertebra, so that a hollow needle introduced between the third and fourth lumbar vertebræ will not touch the spinal cord, but may drain away fluid from the whole of the cerebro-spinal, subarachnoid, and ventricular areas. A long, aspirating needle of about a millimètre in diameter, having been carefully sterilised, is introduced between the third and fourth or fourth and fifth lumbar vertebræ at a distance of about a quarter of an inch from the middle line.

(For method of procedure see article "Meningitis," page 398.)

Accidents are extremely rare, although symptoms have occasionally indicated slight injury of a nerve root, and occasionally blood has been mixed with the fluid, rendering it useless for diagnostic purposes. The principal danger appears to be one noted by Stadelmann, viz., that infective processes originally localised as a circumscribed meningitis may be diffused by the free current set up in the cerebro-spinal fluid.

This operation has a *therapeutic* aim in cases of acute and chronic hydrocephalus, meningitis, and other conditions associated with or arising from increase in the tension of the cerebro-spinal fluid, but the results hitherto obtained can only be regarded as palliative. In a case of cerebro-spinal meningitis, Ziemssen states that each of several punctures was followed by relief of headache lasting for some days, and in hydrocephalus epileptiform convulsions have been relieved, and the "general condition" said to have been improved. Jacoby has relieved headache in cases of cerebral tumour, and in acute meningitis of children has seen an improvement in the pulse with improved mental symptoms, and in one case a return to equality of the pupils. On the other hand, both Fürbringer and Jacoby found that in cases of brain tumour headache was at first intensified, relief ensuing only in about a quarter of an hour. Lichtheim obtained no improvement at all in cases of cerebral tumour. Freyhan, on the other hand, has reported a case of tubercular meningitis which recovered after two paracenteses, the nature of the case being proved by the discovery of tubercle bacilli in the cerebro-spinal fluid.

In order to prolong the possible therapeutic action of lumbar drainage, attempts have been made to keep the opening patent as by incision of the dura mater (after laminectomy) or the use of a horse-hair drain, as well as by the introduction into the meningeal sac of a catheter or rubber tube (Sahli, Wynter), but difficulty is always found in retaining a patent opening. On the whole, the therapeutic use of paracentesis spinalis is still doubtful; "for the present we must state that the therapeutic results of spinal puncture have been very slight, and that all in all from the puncture alone little beyond temporary palliation of certain symptoms is to be expected."

The *diagnostic* value of paracentesis is, on the other hand, very great. The normal cerebro-spinal fluid is perfectly clear, colourless, faintly alkaline, of a specific gravity of 1,010 or less, free from histological elements, containing either no albumin or traces only, but containing a substance (pyrocatechin?) which, although not a sugar, is capable of reducing Fehling's solution. Its pressure is equal to about 150 mm

of mercury. Deviations from these normal conditions will therefore possess a diagnostic value.

Pressure sufficient to cause a spurt of fluid, or even a steady stream, at once indicates increase of tension. Albumin is slightly increased in amount in cases of cerebral abscess or tumour, but its quantity undergoes a marked increase in meningitis, so that more than 1 per cent. of albumin indicates the diagnosis of the latter disease. Spontaneous coagulation also indicates meningitis. Distinct pus is, of course, absolutely diagnostic of suppurative meningitis, and both streptococci and tubercle bacilli have been identified, and have proved the true nature of the cases in which they are found: thus Fürbringer found the tubercle bacillus in twenty-seven cases, and Jacoby in eleven cases of meningitis. Lastly, the presence of blood in the fluid removed may be of great value in diagnosis. Such blood might be derived from scratching the vertebra or one of the nerves of the cauda equina during the operation, but if care be taken by repeating the operation to avoid these fallacies, then blood indicates hæmorrhage into the cerebral ventricles or the spinal canal. In cerebral cases such hæmorrhage will indicate the severity of an apoplectic seizure or of an injury, and in spinal injuries the removal of blood from the lower part of the theca can only be beneficial. Two original cases are recorded in this connection, in which the symptoms of an injury to the cauda equina were rapidly relieved by puncture and withdrawal of blood, but Jacoby wisely declines to insist too strongly on the relation of cause and effect in these apparently curative operations.

In three cases of acute mania lumbar puncture was practised without any beneficial result.

Wolfstein,[2] reporting a case of paracentesis spinalis, employed successfully to exclude a diagnosis of spinal meningitis, insists that the absence of rise of tension in the fluid during uræmia disproves Traube's theory that uræmia is due to intra-cerebral tension.

Kiliani[3] describes an interesting case in which paracentesis spinalis was resorted to for the treatment of an injury of the cauda equina. The patient presented all the symptoms of complete paralysis of the lower sacral roots, symptoms which had shown no tendency to improve up to the fifth day after his accident. On that day a puncture between the third and fourth lumbar vertebræ gave exit to eight cubic centimètres of tarry blood. Within an hour of the operation, the area of anæsthesia was considerably reduced, and some previously paralyzed muscles could again be moved. Death, however, occurred four days later, the exact course of events not being clearly described, and no proper autopsy was performed, so that the case is hardly convincing

as to the real value of the operation. The case is closely on a par with two of Jacoby's already mentioned.

Gaibrissi,[4] who has operated in seven cases, confirms much of the previous work described by Jacoby, and describes amelioration of symptoms in several of his cases. In a case of tubercular meningitis he was able to inoculate tuberculosis with the cerebro-spinal fluid.

Fürbringer,[5] who has considerably advanced our knowledge of this subject by previous communications, reports a few cases in which no fluid could be obtained after paracentesis, even when accompanied by aspiration. One of these was a case of tubercular meningitis in which the autopsy showed that the theca vertebralis was filled, not with a diffluent fluid, but with a spongy, œdematous substance incapable of flowing through the needle. Another case was an example of uræmia, but Fürbringer has in some examples of this condition removed considerable quantities of cerebro-spinal fluid. Quincke was inclined to regard all failures to obtain any fluid as due to technical errors, but Fürbinger appears to have shown clearly that occasionally either the theca is devoid of fluid or else the latter is not subject to pressure sufficient to cause its elimination.

Turner[6] had made a careful analysis of the cerebro-spinal fluid obtained by lumbar puncture in a number of cases of general paralysis of the insane. Operating in fourteen cases, he found that the pressure of the fluid was not materially above the normal pressure, the average being equal to 156·5 mm. of water; it is thus contended that there is no evidence of the supposed increase of tension upon which were based the trephining operations carried on by Claye, Shaw, and Batty Tuke for the relief of this disease. Further, the cerebro-spinal fluid withdrawn presented no marked chemical peculiarities, and had none of the characters of an inflammatory exudation. The amount of protcids was not above that contained in normal cerebro-spinal fluid. The copper-reducing substance was present in nine cases, in small amounts in two, and absent in one, of twelve cases examined *ad hoc*. "The observations seem to show conclusively that at any rate in fairly advanced general paralysis injurious pressure does not exist. Further, the results obtained from the analysis of this fluid lend no support to, if they do not indeed negative, the assertion that it is an inflammable (*sic*) product." Turner also points out that lumbar puncture ought to have therapeutic effects equal to those of trephining, if any such existed, but, "speaking broadly, it has not been followed by any appreciable amelioration in the condition of the patient, either in the bodily or the mental aspects of the case."

REFERENCES.—[1] "New York Med. Journ.," Dec., 1895; [2] "Archives of Pediatrics," March, 1896; [3] "New York Med. Journ.," March, 1896; [4] "Gazz. degli Osped.," Feb., 1896; [5] "Deut. med. Woch.," Nov., 1895; [6] "Brit. Med. Journ.," May, 1896.

PARALYSIS. *Græme M. Hammond, M.D., New York.*

General Paralysis.—Hirschl,[1] after studying two hundred cases of general paralysis in Krafft-Ebing's clinic, comes to the conclusion that all cases are the result of syphilis. In 19 per cent. of his cases no history of syphilis could be obtained, yet the author easily overcomes this bar to his sweeping assertion by the statement that they had probably had syphilis but did not know it. The incubation period varied from two to twenty-nine years. The disease begins as a syphilitic encephalitis, and progresses through the different stages to cerebral atrophy.

Landry's Paralysis.—Bailey and Ewing[2] arrive at the justifiable conclusion that Landry's paralysis is an acute toxæmia in which the poisonous agent affects chiefly the nervous system. The commonest seat of the lesion is in the cord and the medulla, and it may be present in the cortex and the nerve roots. When in the spinal cord the lesion is that of acute anterior poliomyelitis—namely, an acute exudative inflammation, following the distribution of the central branch of the anterior spinal artery, with cellular infiltration of the circum-vascular sheaths, degeneration of ganglion cells, loss of structural elements, and with or without degeneration of the anterior roots. The lesions in other parts of the cerebro-spinal axis are of a similar nature. They reject the view that the disease may exist in the peripheral nerves alone. When the peripheral nerves are affected there are increase of neuroglia cells and degeneration of nerve fibres.

They admit that in some cases demonstrable histological changes in the nervous system cannot be detected, and they also admit that it is impossible to distinguish, by the clinical symptoms, the different types of lesions.

Anterior Poliomyelitis.—Gowers,[3] in two admirable lectures, delivered at the Hospital for the Paralyzed and Epileptic, demonstrates how accurately this disease can be differentiated from other diseases of the cord. He shows how, by the absence of sensory symptoms, disease of the posterior columns of the cord, the nerve roots and the nerves themselves can be positively excluded, leaving the anterior grey horns as the only possible locality for the seat of this disease. He also points out the nature of the lesion by calling attention to the fact that sudden lesions are usually of vascular origin; slowly developing lesions are either due to growths or to degenerative processes; and

that acute symptoms coming on rapidly within a few days, as they do in poliomyelitis, can generally be attributed to inflammation. After referring to the generally unfavourable prognosis, he concludes with a few words on the treatment. He considers the **Nitrate of Strychnia**, injected hypodermically, the best remedy. Beginning with a dose of $\frac{1}{60}$ of a grain once a day, he gradually increases the strength of the dose to $\frac{1}{25}$ of a grain, and in some cases to $\frac{1}{10}$ of a grain, but considers the latter dose rarely advisable. He recommends the use of **Electricity** to lessen the secondary processes of degeneration in their structure, and to make them able to respond better to such nerve impulses as the slow return of function may permit.

REFERENCES.—[1] "Brit. Med. Journ.," Feb. 22, 1896; [2] "New York Med. Journ.," July 11, 1896; [3] "Clin. Journ.," March 18, 1896.

PATELLA (Fracture of the). *Priestley Leech, M.D., F.R.C.S.*

Subcutaneous Wiring of Transverse Fracture of Patella.—Barker[1] publishes some further experience of his method of wiring fresh transverse fractures of the patella (see *Figs.* 43—46.) He has used this method in every case of fresh fracture that has been admitted under

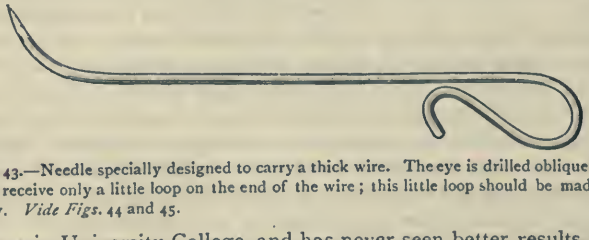

Fig. 43.—Needle specially designed to carry a thick wire. The eye is drilled obliquely, and should receive only a little loop on the end of the wire; this little loop should be made previously. *Vide Figs.* 44 and 45.

his care in University College, and has never seen better results from any other method of treatment. It is simple, safe, and time-saving, both to the surgeon and patient.

He draws attention to the following: (1,) It is only suitable for *recent* fractures; (2,) The operation should be done as soon as possible after the injury; (3,) Some antiseptic pads, wool, and a bandage are applied over the joint, and the patient is told that he can move the leg about in bed as he likes; in addition to this, slight passive daily motion is produced with the hand behind the knee; (4,) Massage is adopted immediately after the operation; (5,) The blood which is effused into the joint should be removed as effectively as possible by squeezing it out through the punctures which are made in the joint (this is most important); (6,) The wire used is soft silver wire, as thick as a No. 1 catheter (English scale); (7,) Before the operation the

surgeon takes each fragment in opposite hands and rubs the fractured surfaces well together until they grate against each other like dry lumps of sugar ; (8,) When the loop of wire is brought out of the lower puncture, the two limbs should be crossed so that the posterior one is carried upwards and to the left of the anterior one which is pulled directly downwards. When now the posterior one is drawn up directly in the axis of the femur and the anterior one downwards in the axis of the tibia, the two fragments are drawn intimately together. Care must be taken that the fragments come accurately together. While the wires are *in situ*, but before they are twisted, all blood is squeezed out of the joint.

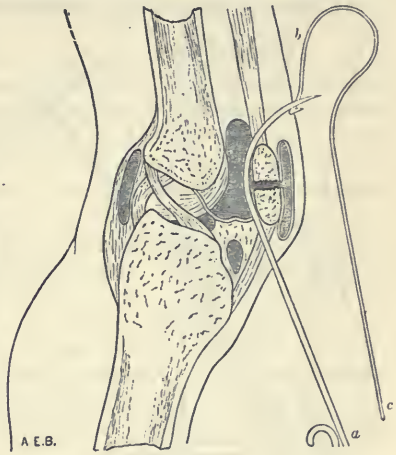

Fig. 44.—Needle (*a*) introduced behind the fragments, and receiving one end (*b*) of the silver wire (*b*, *c*).

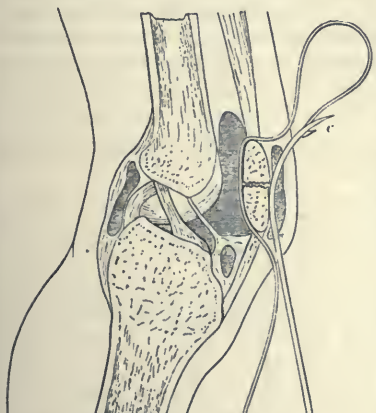

Fig. 45.—Needle (*a*) passed in front of the fragments, and receiving the other end (*c*) of the silver wire (*b*, *c*).

The whole operation takes not more than five minutes. Patients treated by this method are walking about at the end of six or eight weeks with a firm limb and good flexion and extension, and apparently bony union.

Dr. Cox[2] advocates operation in fractured patella four to eight days after the occurrence of the injury. McBurney,[3] of New York, lays stress upon the necessity of uniting the torn lateral portions of the vasti muscles and the torn portions of the capsule. For this purpose he recommends a transverse incision in place of a vertical one.

Mr. Herbert Butcher[4] describes a modification of an operation which he proposed in 1892.[5] A handled needle armed with a strong waxed and carbolized silk ligature is passed deeply through the quadriceps tendon as close to the upper margin of the patella as possible; the first puncture being ¼ of an inch from the border of the tendon, and the point of emergence about an inch from the point of entrance The needle is then withdrawn leaving the silk *in situ*. The needle is again threaded with one end of the same ligature, and entered at the same skin puncture, and passed subcutaneously from above directly downwards over the anterior portion of both fragments, and brought out just below the inferior border of the lower portion of the broken bone (from *a* to *b*) (*Fig.* 47). The unthreaded needle is now passed from the opposite side deeply through the ligamentum patellæ, at a short distance from its lateral border (from *c* to *b*); it is then threaded with the silk ligature and withdrawn.

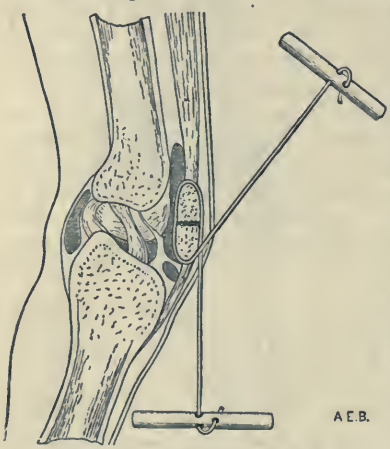

Fig. 46.—Wire in position round fragments and threaded through metal bars. The lower and posterior wire runs upwards to the left of the upper ready for twisting.

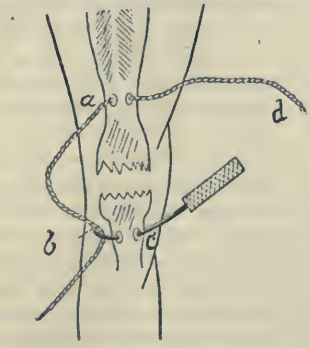

Fig. 47.

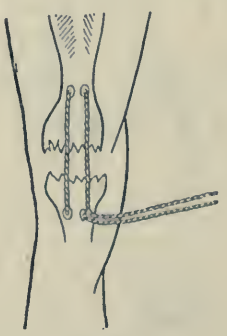

Fig. 48.

The needle is now threaded with the end (*d*) of the silk ligature, and passed subcutaneously from above downwards, and brought out at the puncture (*c*).

The broken fragments are then approximated by an assistant, and well rubbed together until crepitus is obtained, so as to make certain that nothing, such as portions of tissue, etc., is intervening between the broken ends of the bone. The ends of the ligature are then secured in a reef knot (*Fig.* 48).

A back splint, with a few weeks' rest, is now all that is necessary for perfect osseous union.

REFERENCES.—[1] "Brit. Med. Journ.," April, 1896, p. 963; [2] "Annals of Surgery," Dec. 5, 1895; [3] Ibid., July, 1896; [4] "Brit. Med. Journ.," Sept. 26, 1896; [5] Ibid., April 30, 1892.

PEMPHIGUS. *P. G. Unna, M.D., Hamburg.*
Norman Walker, M.D., Edinburgh.

There is really nothing new in the treatment of this disease, **Arsenic,** though by no means a specific, remaining the most dependable remedy.

Montgomery has seen good results from the application of **Belladonna.**

Whipham gives an account of two cases under his treatment at St. George's Hospital. Both were treated with arsenic, and although one case terminated fatally, the drug was apparently useful. From both cases a diplococcus, similar to that found by Demme, Claessen, and Bulloch, was isolated from the cultures. Animals injected with the cultivations died in from four to eight days, and the diplococcus was got from the heart's blood. No bullæ were produced.

REFERENCE.—"Lancet," May 2, 1896.

PERICARDIUM (Puncture and Incision of). (See also "Wounds.")
Priestley Leech, M.D., F.R.C.S.

This procedure requires care, and the directions for its performance have not always been laid down with the accuracy that is desirable.

MM. Delorme and Mignon[1] have made minute anatomical and pathological researches, and propose a less dangerous method for incision and puncture of the pericardium. They state that with the usual methods one is almost certain to wound the left pleura. Researches in sixteen bodies show that as far as the level of the fourth intercostal space the edge of the left pleura is hidden behind the sternum, and corresponds to its border; in the fifth space, in two-thirds of the cases the pleura is wounded even if one keeps close to the edge of the sternum. In one case an attempt to open a purulent pericarditis inoculated the pleura, and in another case incision of the pericardium produced a pneumothorax. In great distension of the

pericardium, the parietal pleura is more fixed than the mediastinal pleura, and is scarcely at all displaced outwards by the distension of the pericardial sac. The operations which they advise avoid all complications either in connection with the heart, the pleura, or the internal mammary artery.

For puncture, the method is as follows : A small cutaneous incision is made in the fifth left intercostal space (if this space is too narrow it may be made in the fourth) close to the edge of the sternum, and the needle of a Dieulafoy's or Potain's aspirator is then introduced close against the bone ; the needle first follows exactly the sternal edge and then the posterior face of this bone for a centimètre; the needle is then pushed directly downwards and a little backwards to a depth of several centimètres, until the liquid comes into the aspirator.

In this procedure the needle following the anterior surface of the heart penetrates the antero-inferior pericardial sinus, which is several centimètres deep, bounded above by the heart, below by the diaphragm, and in front by the pericardium.

For incision of the pericardium, the edge of the left pleura is found and pushed outwards, the fifth and sixth spaces being too narrow at their sternal ends to permit of a search for the pleura ; two centimètres of the fifth and sixth cartilages are excised by means of gouge forceps commencing at the edge of the sternum. The intercostal vessels of these spaces and the triangularis sterni are then pushed away with the fingers. The anterior face of the pericardium is then sought for with the index finger, and the edge of the pleura is pushed outwards along with the triangularis sterni, the mammary vessels and the soft parts forming the walls of the two spaces. At the bottom of the wound, which is 6 cm. by 3 cm., the pericardium is recognized by its white, pearly colour.

Durand[2] deprecates the use even of a capillary trocar in tapping the pericardium, as the pleura or lung may easily be wounded ; he advises the resection of the left fifth costal cartilage ; the internal mammary artery should be ligatured at the upper and lower part of the wound ; the triangularis sterni is separated from the sternum ; the fingers then separate the pleura from the pericardium ; if the pericardium is not exposed enough, gouge away a piece of the sternum. He thinks the resection of the sixth intercostal cartilage, as recommended by Delorme and Mignon, is unnecessary, and as it is often fused with the seventh cartilage, its resection may impair the stability of the seventh rib.

REFERENCES.—[1] "Gaz. des hôpitaux," No. 149, 1895, and "Rev. de chirurgie," 1895, p. 789, et seq. ; [2] Ibid., June, 1896.

PERITONITIS. *A. W. Mayo Robson, F.R.C.S.*

Very remarkable are the changes which have taken place in our estimate of peritonitis. It was but in 1887 that Spillmann and Ganzinotty described no less than twenty-six different forms of peritonitis in their well-known monograph. Now the varieties of peritonitis can be counted upon the fingers of one hand. The evidence is practically complete which demonstrates that all forms of peritonitis are septic and are due to infecting micro-organisms. The existence of a rheumatic form of peritonitis has been by no means placed beyond doubt, and it is safe to assert that its individuality is very questionable. The peritonitis ascribed to the pneumococcus has not yet emerged from the confusion of a bacteriological squabble. Idiopathic peritonitis, which was at one time regarded as a definite and common disorder, has now, indeed, ceased to exist. The constitutional symptoms of peritonitis are in the main those of septicæmia, and it is from blood poisoning and not from inflammatory disturbances that the subject of peritonitis dies. He dies poisoned. When the peritonitis is developed away from what may be termed the "small intestine area," it is apt to be localised. This is illustrated by peritonitis in the iliac fossæ, in the pelvis, and in the subphrenic regions. In all these districts the surgical treatment of peritonitis has been most successful. Peritonitis in the "small intestine area" is, on the other hand, rapidly diffused, and is as rapidly attended by septicæmic symptoms. In the treatment of localised peritonitis surgery can claim to have made great advances, but in the treatment of diffused peritoneal inflammation with marked constitutional symptoms there is little progress to record. The abdomen may be opened and washed out and drained, and the distended bowel may be relieved of its putrescent contents by incision, but the results at the best are not brilliant, and it is evident that the treatment of this terrible complication must still incline towards that desirable prevention which is better than cure.

Excellent have been the results obtained in the treatment of tuberculous peritonitis of almost all grades. The examination of some three hundred recorded cases treated by abdominal section shows that a prospect of cure may be expected in over 60 per cent. of the instances, and that in 33 per cent. of those who recover the cure may be expected to be complete.

Simple incision, with free evacuation of the infected effusion, is the most successful of the many measures employed. The highest percentage of cures has been attained when the abdomen has been neither flushed out nor drained, but when the exudation has been merely evacuated and the parietal wound closed. This fact is as

remarkable as it is unexplained, and it is evident that the time has not yet come when general principles can govern the treatment of surgical tuberculosis.

With regard to the general management of the peritoneum in operation cases, it would be a matter of sad interest to learn how much harm has been wrought by that unfortunate term "the toilet of the peritoneum." The much-abused serous membrane has quite a remarkable capacity for defending itself, up to a certain extent, against the invasion of micro-organisms. This power is lost if the membrane be irritated, or if its fine surface be damaged. Experiments upon animals appear to have demonstrated this fact very clearly. In the course of an abdominal operation, extravasation of one sort and another must, now and then, take place into the peritoneal cavity, and very often the surgeon has to blame his roughness or his defective tamponading for the extent of the effusion. It is well to be reminded that it is better to anticipate an extravasation, by cautious plugging and other means, than to deal with it successfully afterwards. Whether the effusion be harmful or harmless, the surgeon possessed of the term the "toilet of the peritoneum" is apt to be a little indifferent as to its amount. He proceeds blindly to remove it—although it may be quite sterile—by reckless flushings and by infinite sponging, rubbing, and scouring of this most delicate and susceptible of membranes. He removes it at all costs, and the cost unfortunately falls upon the sensitive peritoneum, and peritonitis is the not infrequent result. I do not say that an extravasation should be left in the abdomen, but I would prefer to leave a few ounces of sterile cyst fluid in that cavity than damage the peritoneum beyond all hope by persisting attempts to remove every trace of it by sponging.

If the extravasation be really noxious and also extensive, it is best removed, not by scouring out the abdomen, but by flooding it with sterile water, with as little handling of the intestines as is possible. In actual practice even this washing out of the serous cavity is but very rarely required. Drainage of the peritoneal cavity also is not often needed, and in the selection of vehicles for drainage, I venture to think that the very best is the gauze tampon, and the very worst the glass drainage-tube. The gauze drain, if properly introduced, is most efficient, is capable of almost infinite application, and has proved one of the most valuable of the additions made to the details of an abdominal operation. The future of not a few operations hangs, in my belief, upon the gauze tampon, and but for it there are certain procedures which would be scarcely justifiable.[1]

REFERENCES.—[1] "Brit. Med. Journ.," Oct. 31, 1896.

PERITONITIS. *Priestley Leech, M.D., F.R.C.S.*

In last year's "Medical Annual" attention was drawn to the uses of intra-venous injection of normal **Saline Fluid** or of artificial serum in shock in abdominal operations and other conditions.

M. F. Lejars[1] has discovered another application for the successful use of intravenous injections of artificial serum. He records three cases of septic peritonitis in which he employed this method. All the cases appeared likely to die, but two out of the three recovered. The first case was one of ruptured intestine from the kick of a horse ; the signs of acute peritonitis were well marked on admission to hospital. The abdomen was opened, the rupture found and sutured. Three subcutaneous injections (of 16 oz. each) of artificial serum were made on the next two days, but the patient's condition appeared hopeless on the third day, when 2 pints of artificial serum were injected intra-venously. He immediately improved. For several days three injections of 2 litres (3 pints) were given, and these caused profuse diuresis and diarrhœa. During the seven days after the operation he received no less than 26 litres (nearly 40 pints) of artificial serum. On the ninth day the injections were stopped and convalescence was uninterrupted.

The other two cases were peritonitis following operation for ruptured tubal pregnancy and peritonitis following ruptured typhoid ulcer ; the former case recovered but the latter died.

The injections did not cause hæmaturia or albuminuria. The author thinks that the injections act by causing the elimination of large amounts of toxins and organisms by the kidney and bowels. Occasionally abdominal pain and a little dyspnœa are caused at the end of the injection, but these do not last long. The artificial serum used was that suggested by Dr. Hayem, viz., sod. chlorid., 5 grammes ; sod. sulphatis, 10 grammes ; aq. destilla, 1 litre (*i.e.*, 75 grains, 150 grains, being nearly 1¾ pints).

REFERENCE.—[1] "La Presse médicale," Jan. 1, 1896.

PERTUSSIS. *Henry Dwight Chapin, M.D., New York.*

Dr. Kurloff[1] details the results of a study of the fresh, unstained sputum in a series of cases of pertussis. He found an amœba characterized by a finely granular protoplasm and great capability of movement, which he believes to be the infecting agent of the disease. As this organism grows it attains considerable size, large, bright, granular spores appearing upon its body, arranging themselves in concentric layers. Upon rupture of the cell, the spores escape, and proceed to increase in size, until, finally, and partly within the body

of the patient, through rupture of the capsule, young amœbæ are set free. These are provided with cilia, and are capable of active movement. No specific significance was attached to the many bacteria present in the sputum, although the importance of these with regard to the secondary phenomena and complications of the disease must be conceded.

D. F. T. B. Fest[2] states that **Peroxide of Hydrogen** is the most effective and least irritating antiseptic we possess in the local treatment of pertussis. It should be sprayed directly into the larynx of the child, in the strength of 30 volume peroxide (hydrozone), 1 part; distilled water, 10 parts; glycerine, 1½ parts; two or three times daily. If the paroxysms are severe, paint larynx with cocaine. If vomiting is severe, give menthol.

Dr. S. A. Boutor[3] advises **Menthol** in pertussis, to be used as follows: About 20 grains of menthol are dissolved in an ounce of liquid vaseline in an ordinary nasal spray producer; as soon as a paroxysm begins, or, preferably, as soon as the patient feels that one is impending, a fine cloud of spray is diffused in front of the face, the spray producer being held about two feet away. By this means the air in front of the nose and mouth is saturated with the oily particles, and at each inspiration they are drawn into the air passages. This is quite painless, but occasionally a slight spasm of the glottis occurs. The effect of this inhalation is quickly seen, for the mucus is rapidly expectorated, and the paroxysm is soon over. Convulsions and other complications are thus less frequent.

Dr. A. M. Vargas[4] employs **Phenocoll** with good results. He gives the hydrochloride of phenocoll in daily amounts of from 1 to 30 grains, according to the patient's age, dissolved in water, to which sugar or gum arabic has been added. The effect is due, not to anti-bacterial action, but to its acting as a sedative.

Dr. Rothschild[5] used **Tussol** in an epidemic of pertussis. He states that in patients who were treated with tussol from the outset, and took their doses regularly, the duration of the disease was notably shortened, and its whole course was much milder. In a few of them it lasted not longer than about a fortnight.

Dr. M. Marfan[6] believes that **Bromoform** is still the best specific for pertussis.

The formula that he employs is as follows: Bromoform, 48 drops; oil of sweet almonds, 20 grammes; gum adragant, 2 grammes; gum arabic, 4 grammes; cherry-laurel water, 4 grammes; and water to make 120 c.c. Mix first the bromoform and oil and shake vigorously; then add the other ingredients. A coffee-spoonful contains two drops

of bromoform. For a child five years of age he prescribes as a daily dose 4 drops for each year of the age; from five to ten years the beginning dose is 20 drops daily. These doses should be gradually increased by 2 to 4 drops a day until they are doubled. Under six months the initial daily dose should be 2 to 3 drops; from six months to one year, from 3 to 4 drops.

Dr. Fiertz[7] gives the following rules for the administration of bromoform.

(1,) In children under ten, as many drops of bromoform as the child is years of age, *plus* two, every six hours; the drug is best given in a little sweetened water.

(2,) If after eight days the number and intensity of the paroxysms have not diminished, each dose is to be increased by 1 to 2 drops.

(3,) After the paroxysms have disappeared, the bromoform must be continued in the same doses for a fortnight longer; then the doses are decreased very rapidly, but the treatment should not be discontinued suddenly. If the paroxysms occur only at night, the remedy need be given only every eight hours.

Dr. A. Rose[8] has employed the inflation of the rectum with **Carbonic Acid Gas.** He has been impressed with the superiority of the carbonic acid treatment only after being familiar with many other whooping-cough remedies.

Dr. Ullmann[9] advises strongly the **Fresh Air** treatment of pertussis. The child should pass the entire day out of doors, not only in the warm season, but even at all times of the year, provided it be not stormy. It is considered only necessary to prevent the child from running, or talking, or otherwise provoking an access of coughing. Contrary to general teaching, he advocates the open-air exposure of the patients even when there is bronchitis or broncho-pneumonia, whether consecutive to pertussis or not, the only precaution being to have the little ones well wrapped up. This plan he has practised with infants a year old, suffering from grave broncho-pneumonia. During this treatment the author employs neither a specific nor narcotics.

Drs. Wells and Carre[10] believe the pertussis microbe fabricates some virus which, taken into the circulation, acts as an irritant poison to the nervous tissues, especially the respiratory and vagal centres, rendering them far more excitable than normal. They regard the catarrhal stage as the period of microbic activity, and the whooping one as due to the after-effects of a poison generated by the microbe. This affords, if true, a complete reconciliation between the bacillary and the neurotic theories of the disease. The practice of the authors is to give doses of **Hydrochlorate of Cocaine** in water, based on the standard of a 1-grain

dose for an adult, three or four times a day, by the mouth. No marked evil effects were seen from the use of cocaine, and the average duration of the cases was about three weeks.

REFERENCES.—[1] "Centralblatt f. Bakteriologie," vol. xix, Nos. 14 and 15, 1896; [2] "Journ. Amer. Med. Assoc.," vol. xxv, No. 7, 1895; [3] "West London Med. Journ.," July, 1896; [4] "Therap. Woch.," Jan. 5, 1896; [5] "Deut. med. Woch.," No. 1, 1896; [6] "Rev. mens. des mal. de l'enf.," April, 1896; [7] "Practitioner," Feb., 1896; [8] "New York Med. Journ.," Nov. 30, 1895; [9] "Amer. Journ. Med. Sci.," No. 5, 1896; [10] "Lancet," vol. i, No. 23, 1895.

PHARYNX (Cancer of). *Priestley Leech, M.D., F.R.C.S.*

In the Lettsomian Lectures for 1896, Mr. Watson Cheyne deals in a most exhaustive and masterly manner with the treatment and results of cancer in the pharynx. Most commonly (60 per cent. of the cases) the disease commences in the mucous membrane over the tonsils or pillars of the fauces. From the tonsil the disease spreads most often and earliest on to the pillars of the fauces, and upwards to the soft palate, next most frequently downwards on to the tongue, and lastly backwards over the pharynx. Epithelioma sometimes begins about the epiglottis and orifice of the larynx.

It is remarkable how little trouble the disease causes at an early period. The disease grows very readily aud rapidly, and it is but seldom that the patient seeks advice before it has spread to an alarming extent, and generally he is condemned to palliative treatment.

The various points with regard to the methods of operating, are touched upon, and a complete list of similar operations is given.

(1,) *The Question of Preliminary Tracheotomy.*—It is better if possible to avoid tracheotomy; but where the base of the tongue is interfered with, and the patient does not swallow readily, it is well to perform preliminary tracheotomy, and go on with Hahn's tubes for some days afrer the operation, till the patient has to some extent, at any rate, regained the power of easy swallowing.

(2,) *Control of the Hæmorrhage.*—In most of his cases, Mr. Cheyne tied the external carotid artery. In one case he divided the operation into two stages by first tying the carotid, and then excising the growth some days later. Unless this is done, he is inclined much against his will to give up in most cases preliminary ligature of the external carotid, and either tie its branches, or control the bleeding by temporary compression of the artery during the operation.

(3,) *Removal of the Glands.*—Whether glands are felt or not, and as a rule they are enlarged, the lymphatic area ought to be cleared out. Enlarged malignant glands are no bar to operation, unless very

extensive or adherent to a variety of structures in the neck, and not merely to the sheaths of the vessels.

It is important to remove the glands and lymphatics under the sterno-mastoid, as they become infected very early. The best skin incision is one running along the anterior border of the sterno-mastoid muscle from the mastoid process above, to the middle of the thyroid cartilage below.

The operation may be done in two stages, the glands being first removed, and a week or ten days later the primary disease being attacked. The advantages of this are: (1,) The shock is minimised; (2,) If the carotid artery be tied, there is less risk of secondary hæmorrhage if its end be in an aseptic wound for some days, and become buried in new tissue; and (3,) The planes of the cellular tissue in the neck would become more or less sealed by organising tissue before being exposed to the septic influences from the mouth.

Against these advantages there is one great objection, viz., that after removing the glands open lymphatic vessels are left which may contain or convey cancerous material to the newly made wound, and thus infect it before the second operation. The only case in which he divided the operation into two stages is the only one in which there has been a local recurrence, and the recurrence was almost immediate.

(4,) *Treatment of the Wounds.*—These wounds are not amenable to aseptic treatment. The best safeguards against septic troubles are the avoidance of fresh infection at the time of the operation, the free drainage of the cavity, and possibly to some extent the removal of the internal jugular vein.

As a preparation, see that the teeth are repeatedly and thoroughly scrubbed, and that the patient uses a frequent gargle of pretty strong Condy's fluid or sanitas.

After the operation, pack the wound for twenty-four hours with cyanide gauze, powdered with iodoform, so as to stop the oozing of the blood, and to prevent the surface becoming covered with clots which would decompose. This is withdrawn the day after the operation, and is not re-introduced, but as soon as the patient can manage it, he is told to fill his mouth with weak sanitas or Condy's fluid, and let it run out of the drainage tube. The skin incisions are stitched up after the operation, and a large drainage tube is fixed at the most dependent part of the wound, and passes freely into the pharynx.

The tube is left in for two days, and then taken out once or twice a day, and washed in 1 in 20 carbolic before being introduced again. Free drainage is of paramount importance.

The feeding of the patient is of great importance. In severe cases where a great part of the pharynx has been taken away, the stomach tube must of course be used, and one may be left in at the operation for three or four days, and then passed whenever necessary, taking care to pass it along the healthy side of the pharynx. A plan suggested by Dr. Semon may be used, viz., hanging the head over the side of the bed with the sound side downwards, and then taking the fluid into the mouth. Rectal alimentation must be combined with the feeding by the mouth.

The tables appended are worth studying by any one interested in this department of surgery.

REFERENCE.—"[1] Lancet," vol. i., 1896, p. 677.

PHARYNX (Disorders of). *Priestley Leech, M.D., F.R.C.S.*

In superficial syphilitic adhesion between the soft palate and the wall of the pharynx, Lieven[1] describes the following method of operation: After cutting the palate free as well as all bands of adhesions, the posterior nares are powdered with **Europhen** and packed with europhen gauze for ten days. A rubber bag, like a colpeurynter, is then introduced for several hours, daily at first and then less frequently. The bag is put into position by attaching the tube to a soft catheter, which is passed through the nose into the throat; when in position the bag is distended with air.

In very old cases of extensive destruction of the posterior wall of the pharynx, it is better not to operate.

REFERENCE.—[1] "Münch. med. Woch.," No. 21, 1895, quoted in "Amer. Journ. Med. Sci.," Dec., 1895.

PHLEGMONOUS INFLAMMATIONS. *Priestley Leech, M.D., F.R.C.S.*

Salzwedel[1] recommends the application of dressings of 60 per cent. to 90 per cent. **Alcohol** to phlegmonous inflammations. If these are of the milder sort, an abortive resolution occurs, while in the severer forms unusually rapid softening and early termination in circumscribed abscess result.

The method of application is as follows: The skin is washed with ether, and any wound is covered with antiseptic mull; a moderately thick layer of absorbent cotton wool soaked in alcohol is applied, and over it some waterproof material perforated or cut in strips, so as to retard but not wholly prevent evaporation. The dressing is renewed daily, and should be continued a few days after resolution has begun.

REFERENCE.—[1] "Deutsche milit.-ärtzl. Zeit.," No. 23, and "Brit. Med. Journ.," July 6, 1895.

PHTHISIS. (See also "Malaria.")

R. Shingleton Smith, M.D., B.Sc., F.R.C.P.

Ætiology.—Some of the difficulties in any radical treatment of phthisis are well indicated by the following considerations of Dr. Ransome,[1] who observes that when the bacilli of tubercle have lodged in the alveolar epithelium, there is, after a time, an increase in their number, and subsequent desquamation; then, later on, there is hyperæmia, with migration of white blood corpuscles into the alveoli, accompanied by a re-active increase in the neighbourhood of the disease focus, which thus tries to protect the surrounding parts by encapsuling itself. The organism is then hedged round with the products of inflammatory action, with exudation cells or fibroid material. It is thus closely shut in from the air passages, and is placed at a distance from vascular supply; and it must then be most difficult to reach either through the medium of the inspired air, or by the currents of the blood. When once it is entrenched behind its barrier of exudative material, it is almost secure from attempts to reach it with either volatile or liquid disinfecting agents.

The pathological processes set up by the presence of tubercle bacilli, and the methods of arrest of tubercular processes, are well described by Harris and Beale,[2] and they quote Dr. Kingston Fowler,[3] who writes, "Few expressions have done more than this (the stages of phthisis) to confuse the minds of students. . . . . It is hardly necessary to insist that the so called stages of consumption are stages in a pathological process, which may be arrested in any one of them."

The principal modes of extension of the disease are described by Dr. Percy Kidd[4]: First, by direct continuity, preferably along lymph channels; secondly, by the formation of fresh foci by tubercular bacilli, which are carried in the lymphatic circulation for some little distance in the lung; thirdly, the most important of all, a cavity having formed in the lung, its secretion escapes into the surrounding bronchus, and is expelled by cough. But the discharge of sputum is apt to be incomplete, and the infective material is liable to be sucked back into other bronchi, and into healthy lung tissue, and thus arise fresh centres of disease.

M. Terrier[5] gives evidence of the contagiousness of tuberculosis contrary to that derived from the Hôpital Bichat. There can be no doubt that the dust of apartments where tuberculous patients remain becomes charged with bacilli. Suspected cases should be isolated, and in order to determine the question, an injection of tuberculin ought to be administered. It is only in this way that the dangers of contagion in hospital can be guarded against.

Dr. Ransome[6] is a strong anti-contagionist. He thinks it is not personal contact, but the inhalation of the dried sputum which is to be feared, and this by suitable precautions can be avoided.

Although we may conclude with Hirsch "that contagious transmission of phthisis plays but a subordinate part in the spread of the malady," yet the case is far otherwise when we transfer the accusation from the person of the consumptive to the house or rooms in which he lives. "Here the evidence is overwhelming that not only houses, but whole districts, are infecting tubercular areas."

Dr. Ransome advises the following measures for disinfection: The regular cleaning and white-washing and ventilation of the premises, the disposal of excretions, and especially of the expectorated material.

If necessary, disinfection of rooms by a 1 per cent. solution of chlorinated lime, after Prof. Delépine's method, should be carried out. The sputum of consumptive persons must be destroyed quickly, and must not be allowed to become dry. A spitting cup, containing just enough 5 per cent. solution of carbolic acid, or a weak solution of chlorinated lime to cover the bottom, should be used; or, better still, a paper spittoon that can be burnt.

Out of doors, a pocket flask, such as Dettweiler's, that can be scalded after using, should be employed.

Small pieces of linen, or calico, or Japanese paper, should be carried, and if absolutely needful may be used, and immediately burnt. Pocket handkerchiefs should never be used to receive the expectoration.

After death, measures should be taken for the thorough disinfection of the house, bedding, and clothes.

Diagnosis. — Dr. C. W. Ingraham,[7] again directs attention to the well-known fact, that, of considerable value in diagnosis is *a rise of temperature* of from one-half to one degree at some period of greater or less duration every twenty-four hours; it occurs previous to every other symptom, and before the general health of the individual is influenced to a noticeable degree. The temperature will be most elevated following bodily fatigue. Excluding other morbid conditions that would cause a similar elevation of temperature, it is safe to diagnose the case as one of pulmonary (or laryngeal) tuberculosis when this temperature has persisted for a period of two weeks and is associated with loss of weight and vitality, even though there has been no accompanying cough or expectoration, and though physical examination gives negative results.

David[8] describes a pre-tuberculous polyuria, occurring commonly in young men, with a nervous temperament, and he thinks that the polyuria should be encouraged as a means of eliminating poisonous products.

One of the least reliable of the evidences of phthisis is *the cracked-pot sound.* In phthisical patients in the third stage the conditions favourable to its production are as follows: (1,) It is necessary that the cavities should be spacious without being too large; (2,) They should be superficial; (3,) Their walls should be slight; (4,) They should communicate freely with the bronchial tubes; (5,) They should contain a certain quantity of muco-purulent liquid; although it is not necessary that the cavities should contain muco-purulent secretions, it is sufficient if the secretions exist in the bronchial tubes communicating with the pulmonary cavity.[9]

A method of diagnosis of tuberculosis from the morphology of the blood has been described by Dr. Holmes,[10] who after pointing out that early diagnosis is essential, because of the fact that when the bacilli are found the disease is advanced, and after describing the pre-tuberculous state in which the disease is latent, endeavours to show that cell disintegration is abundant in tuberculous blood in accordance with a tendency to more or less extensive tissue disintegration.

He finds the following characteristics of tuberculous blood: Marked deviation from the normal percentages of all varieties of leucocytes, great decrease in percentage of small lymphocytes, great increase in the percentage of phagocytes—usually a marked increase in percentage of large lymphocytes; many giant lymphocytes with irregular contour and protruding globules of hyalo-plasm; eosinophile cells absent or few in number only in severest cases; myelocytes occasionally present, marked cell disintegration, many groups of *débris* from disintegrating leucocytes; phagocytes with indistinct cell contour, and granules few in number, poorly stained, and scattering, marked irregularity in size and appearance of phagocytes, dwarf phagocytes as small as small lymphocytes, giant phagocytes double the size with five or more nuclei, often a clear, narrow, and sharply defined ring separating the nucleus from the cell body in small and large lymphocytes, etc., etc.

The author looks forward to a no distant day, when, if we expect to detect tuberculosis in its incipiency, we must study the leucocytes.

Prognosis.—Dr. J. E. Pollock[11] alludes to the influence of age, sex, and heredity. He points out the utility of the fibroid process which is the natural revolt against active inflammation in lung; it prolongs life, as it is the chief important factor in limiting the disease.

High temperature is the measure of lung irritation: the two things go together.

He takes a more hopeful view than formerly — years ago the limit assigned was about nine months—may we not now say there is no limit.

Contrary to usual belief Dr. Ernest Barié[12] in an exhaustive article

upon pulmonary tuberculosis in the aged, notes the frequency with which persons of advanced age suffer from phthisis.

Senile tuberculosis may be chronic or acute, the former being the more common. The prognosis is, on the whole, more favorable than in the case of younger subjects.

TREATMENT.—This subject now requires a volume[13] of nearly five hundred pages to give a fairly full review, and even then it may be said that some of the points are only very lightly touched upon. The authors indicate the necessity for stopping the action of the bacilli in the tissues, either by destroying or diminishing the vitality of the former, or by increasing the power of resistance of the latter, and they consider the methods of treatment under the two corresponding heads :—

(1,) The constitutional treatment, which aims at increasing the resistive power of the tissues, and comprises all the means we have of improving the general health, and of improving the environment of the patient, with a view of diminishing the dose of the poison to the influence of which he is exposed.

(2,) The antiseptic treatment, which aims at the actual destruction of the bacilli within the tissues by the introduction of drugs which have the power of destroying or, at any rate, of preventing the growth of the bacilli outside of the body.

Two natural methods of cure are described[14] : (*a*,) By fibrosis and calcification ; (*b*,) By softening and expulsion.

(*a*,) Little need be done beyond general hygienic treatment ; antiseptics may be useful, but are not essential. The remedies are chosen for their tendency to promote calcification—lime salts, Parrish's food, glycero-phosphate of lime, etc.

(*b*,) Guard against the dangers of extension and systemic poisoning by timely administration of antiseptics and antipyretics; also hasten the process of softening by mercurials, iodine and iodoform, arsenic and hypophosphites, tuberculin, combination of liq. hydrarg. perchlor. with perchloride of iron. Creasote and guaiacol, in addition to their action as antipyretics, diminish secretion from pulmonary cavities, and appear to have a marked inhibitory influence over the spread of tuberculosis. There is good evidence that quite small doses given for long periods are useful. We may dismiss all idea of directly killing the bacillus in the body; the most that can be expected is that the bacillus should be rendered less active or less virulent.

The hypodermic method is useful when larger doses are required than can be absorbed from the alimentary canal ; not more than 15 to 20 minims are commonly absorbed per diem by the alimentary canal.

The value of *antisepsis* and elimination in pulmonary phthisis has been

indicated by Dr. F. R. Walters[15] who states that want of success is due to the following considerations : (1,) Antisepsis is only one of several factors essential to success ; (2,) Not applied early enough ; (3,) Insufficient thoroughness and duration ; (4,) Some relapses due to re-infection ; (5,) Relapses often due to intercurrent attacks of pneumonia, influenza, etc.

A review of the natural methods of cure concludes as follows : "To sum up, it appears to me that the antiseptic method is of real utility in phthisis, but cannot be alone depended upon. Hygienic treatment is of the first importance. Nutrition must be improved by administration of cod-liver oil and other familiar remedies. Symptomatic treatment directed against profuse night sweats, diarrhœa, and other troublesome symptoms is also of great importance. Inflammatory complications must be attended to in ways calculated to diminish excretion, or to bring about the speedy expulsion of peccant matter. Early quiescent cases are best treated by expectancy, but where softening is tardy, it may with advantage be hastened by the administration of resolvent remedies—preferably, as a rule, those which are also antiseptics ; and, during the whole time of treatment antiseptics should be regularly administered in doses gradually increasing up to a maximum which varies with each case, and continued for some time after the appearance of dry sounds in the chest. Given continuously from an early stage, and for long periods in substantial doses antiseptics will decide the battle in favour of the patient, and in a large proportion of cases bring about a relative or even an absolute cure. But a half-hearted administration and the neglect of other well ascertained methods of treatment will throw doubts on the value of the remedy employed, and only lead to failure. The choice of the antiseptic and the method of administration will depend on idiosyncracy and the peculiarities of the particular case, but in most cases it will be advisable to give it by inhalation, and also either by the mouth or under the skin. If I have dwelt most on guaiacol and creasote it is because hitherto the best results have apparently been obtained from these, and because I am most familiar with them, but I do not deny that other antiseptics are sometimes of the greatest utility."

Creasote has been largely employed at Manchester Hospital for consumption. Given in a simple emulsion with tragacanth, in doses of 5 to 10 minims three times a day, it was rarely found to disagree. The best results were obtained in those who were able to take 10 minims regularly for long periods of time.

As regards **Guaiacol,** when from 6 to 10 grains daily were given there seemed to be but little difference between it and creasote.[16]

It would appear that on all hands creasote still holds its position as the drug which stands first, and it is generally admitted that the value of the drug varies in proportion with the dose which the patient is able to take.

According to Harris and Beale[17] it is seldom necessary, or indeed advisable to give more than 20 to 30 minims, and generally speaking, 6 to 15 minims in the twenty-four hours is a sufficient dose. In the authors' experience the results were not altogether what they would wish, but we think that a more liberal use of the drugs of the creasote type might give them better results. We have rarely any difficulty in getting patients to take 60 or 90 minims of pure guaiacol in the twenty-four hours, and the more completely we can saturate the patient the more likely shall we be to modify the development and growth of the bacilli in the lungs. Doses such as this are, however, not to be given when the degree of prostration is great, as they may produce toxic results and add to the prostration; in cases of this kind we have sometimes thought that they accelerated the death of the patient.[18]

S. Solis-Cohen[19] recommends the following formula in cases of pulmonary tuberculosis presenting evidences of breaking down of tissue, or in which signs or symptoms of catarrhal processes in any portion of the air-passages are present, or in which there is continuous elevation of temperature or intermittent or remittent fever, exceeding 99·5° F. :—

℞ Creasoti (beechwood),	♏xxx-lxxx	Glycerini	℥ij
Tinct. Cardamomi	℥iv	Alcoholis, q.s. ad	℥iv

M. Sig. Two teaspoonfuls in water after meals.

Note.—To the glycerine add the creasote, then the tincture of cardamoms and alcohol. The smaller dose of creasote is used at first and the quantity gradually increased until 5 drops, four times a day, is reached as a maximum.

Dr. Sinclair Coghill[20] advocates the hypodermic use of **Guaiacol** in acute pulmonary tuberculosis. He does not, however, advocate this proceeding indiscriminately in every case of pulmonary tuberculosis, without reference to the stage of the disease or consideration of other remedial measures previously exploited or still thought necessary. For instance, if the range of temperature is not extreme, and the other conditions not urgent, it is better to try the effect of guaiacol administered in the usual way by the mouth, either in capsule or dissolved in cod-liver oil. A dose of ♏v three times a day even may suffice to reduce the temperature, but, on the other hand, it may be necessary to intensify the treatment by raising the dose ♏v at a time until ♏xl or even more has been reached The favourable effect of this exhibition of the remedy *per os* is well illustrated by many charts and cases.

In Dr. A. Jacobi's[21] new work he says: "No one treatment of all forms of tuberculosis ever satisfied me to the same degree as has that of guaiacol. If the taste be objectionable, the **Carbonate of Guaiacol** may be substituted in three or four daily doses of 1 to 3 or 4 grains each. Both of these preparations, particularly the latter (guaiacol carbonate), may be combined with other drugs according to indications."

An association of the **Essential Oil of Peppermint by Inhalation with Creasote** has been carried out by Dr. Carasso[22] since 1888, and has given good results; the bacilli always disappeared from the sputum, and in forty-three cases there were thirty-seven cures.

Dr. M. F. McTaggart,[23] Napa, Cal. sums up the therapeutics of pulmonary consumption and tuberculosis in general.

He gives the following formulæ. When **Guaiacol** is called for, we use it in two sets of formulæ—viz., No. 1 and No. 2—of varying strength, to be used subcutaneously and internally, as follows :—

No. 1.

℞ Guaiacol	5 per cent.	Glymol	100 per cent.
Salol	3 per cent.		

M. Sig.—Hypodermically.

No. 1 (*A*).

℞ Guaiacol	gr. iv	Glymol	℥j
Salol	gr. iij		

M. Sig.—Internally.

No. 2.

℞ Guaiacol	5 per cent.	Glymol	100 per cent.
Thymol	2 per cent.		

M. Sig.—Hypodermically.

No. 2 (*B*).

℞ Guaiacol	gr. iv	Glymol	℥j
Thymol	gr. ij		

M. Sig.—Internally.

Dr. McGillicuddy,[24] New York, advocates a special diet and systematic muscular exercises in the treatment of tuberculosis.

His plan of treatment consists in giving at rather frequent intervals a considerable quantity of carefully roasted or broiled beef or mutton, raw eggs, stale bread, butter, sterilized milk, and vegetables. After a few days of treatment the meat should not be less in amount than a pound a day, and the quantity of bread and vegetables should be even, if possible, somewhat larger. When there is a disgust for the meat diet the stomach needs special treatment, for a short time only, by the addition of a digestant such as dilute hydrochloric acid and hot water to remove irritations.

Drs. Grasset and Vedel[25] think that **Tuberculin** has fallen into undeserved disrepute, perhaps owing to too large quantities being used, the most serviceable dose being $\frac{2}{10}$ to $\frac{3}{10}$ of a milligramme for the first, and $\frac{1}{2}$ a milligramme for a second injection. From their experiments on fourteen cases they conclude that : (*a*,) In these doses tuberculin is quite harmless, and there is no risk of aggravating an existing tuberculosis ; (*b*,) In certain cases sufficient reaction took place to make a diagnosis of tuberculosis obvious ; (*c*,) In two cases reaction was absent or doubtful ; (*d*,) Absence of reaction does not exclude tuberculosis, since there was none in three cases. This may be explained by supposing the organism to be accustomed to the toxin, when these small doses would be useless. However, in advanced cases this test is not required ; (*e*,) One case showed a slight reaction. It is known that syphilis, leprosy, and actinomycosis may react to tuberculin, and so the test is useful only if these do not complicate the case.

From an analysis of a case treated by Koch's tuberculin, Dr. J. G. Sinclair Coghill,[26] Ventnor, remarks, "This case confirms me in the opinion that tuberculin has potent therapeutic efficacy in the treatment of tuberculosis when used judiciously and with caution in doses and under conditions adapted to each individual case."

Springthorpe[27] at the Australian Congress on tuberculosis in man and animals, agrees with Whittaker,[28] and says : "After more than four years' continuous use of tuberculin I may perhaps claim to speak with some weight upon this point, and I venture to tell this Congress that I have always found tuberculin reliable diagnostically when used with discretion."

Dr. Breton,[29] of Dijon, records his experience of the injection of **Sterilised Olive Oil** with **Guaiacol** and **Iodoform,** during the past fourteen months, having treated fourteen patients and used the injections altogether one hundred and fifty-nine times.

The liquid which he employed was made as follows :—

℞				
	Sterilised Olive Oil	4 ounces	Iodoform	15 grains
	Guaiacol	80 grains		

All the injections were made under the skin of the abdomen or the flanks, and no signs of erythema, induration or abscess developed. He believes that this method possesses distinct advantages and is well worthy of being followed.

F. R. Walters[30] says the subcutaneous method of administration of **Creasote** and **Guaiacol** has been adopted in one form or another by Schetelig, Picot, Diamantberger and Weil, Burlureaux, and others. Schetelig uses 20 to 30 per cent. solutions of creasote in oil of cloves.

injecting 16 minims into the thigh or abdomen from four to twelve times daily, leaving the needle in and applying gentle massage between the injections, which are repeated at intervals of a quarter of an hour to an hour. Sometimes the taste of creasote was noticed after the injection, but there was no digestive disturbance, and marked antipyretic effects were observed. Guaiacol is given in the same way, in ⅓ to ¼ the dose, by the same physician. Liquid vaselin is preferred as a medium by Meunier, of Lyons; while Picot, of Bordeaux, injects a mixture of sterilised olive oil and vaselin containing 1 per cent. iodoform and 5 per cent. guaiacol, beginning with 1 c.c. of the mixture and increasing to 3 c.c., remarking that no swelling or other local reaction follows. Diamantberger and Weil, at the Paris Congress for Tuberculosis, in 1891, advocated injecting creasote dissolved in an equal volume of sterilised almond oil. Of this they injected two Pravaz syringefuls in twenty-four hours, and after a thousand injections have had no accidents. It is claimed by Prévost that a chemical combination of guaiacol with oleic acid is much less irritating than a mere oily solution.

Burlureaux uses a special apparatus, by which the oily solution is driven into the body by atmospheric pressure, the degree of which is indicated by a manometer. Not more than 20 gm. (5 fld. dr.) per hour must be introduced, so that at the height of the treatment most of his patients receive from 50 to 100 gm. of creasoted oil *per diem;* a single injection may last several hours. His treatment begins with 5 gm. of a 1 in 15 solution; and if no signs of intolerance appear, he increases the dose to 50 gm. or more. One of his patients received 5 kilos. under the skin in five months, along with 1 kilo. per rectum. This represents between 30 and 40 minims of pure creasote per day. The largest quantity injected at one sitting was 220 gm., or nearly 8 oz. of a 1 in 15 solution. F. R. Walters believes the treatment to be well borne, and may be useful where other methods fail. The doses should be very cautiously increased, and the treatment should not be tried where the kidneys are unsound, or there is a large area of inflamed lung, or decided signs of intolerance. No form of creasote treatment is of use unless it is long continued. One in 5 guaiacol appears to be as well borne as 1 in 15 creasote solution; and notwithstanding the results obtained by various observers, it is not finally settled that guaiacol is inferior to creasote in the treatment of phthisis. The results with an ordinary syringe are apparently quite as good as with the Burlureaux apparatus, which should be reserved for exceptional cases.

Dr. J. Edward Squire[31] says "the best means we have for destroying the tubercle bacillus within the body exist in the action of the living cells and fluids of the body—the natural safeguards against deleterious

germs. If we drench the tissues with antiseptics, we may diminish the vitality of the bacilli, but at the same time we impair the vitality of the 'phagocytic' cells, and this not only at the disease centres, but throughout the body. We are then interfering with the natural means of cure, not assisting Nature; and whenever medicine is opposed to the natural process of cure, it is likely to do more harm than good. I have at different times given a fair trial to most of the special drugs which have been found successful by others; but in looking through my hospital records, I have not found one that gave results which justified expectations held out by their advocates."

Antiphthisin is a remedy usually given hypodermically, and the beginning dose for adults should be $\frac{1}{10}$ of a cubic centimètre, and this is increased from day to day by $\frac{1}{10}$ c.c. until $\frac{5}{10}$ are reached. This dose may be repeated for several days, or a week, and again increased by tenths as before. Arriving at 1 c.c. it is well to repeat this dose for a week or more, and when distinct improvement is already manifest, as is usually the case, this dose may be maintained for a longer time. It is rarely necessary to exceed 2 c.c., although much larger doses are well borne, and cause no unpleasant symptoms.

The remedy is continued in doses of 1 to 2 c.c. according to the results obtained and the nature and stage of the case, for several months, when an intermission may be practised, especially if the results obtained are such as to indicate entire arrestment of the tubercular process. But even in such cases, and in those where all symptoms have disappeared, it is wise to repeat a series of injections after intervals of one or more months, in the meanwhile keeping the patient under observation.

Dr. Karl von Ruck[32] observes that of those who have used this remedy all agree that it has caused no unpleasant symptoms, and that the results obtained justify the claims made for it.

Dr. Karl von Ruck[33] also reports the results of a commission for the investigation of the value of antiphthisin in tuberculosis made at the Charity Hospital of New Orleans. The medical cases treated were twelve, and the conclusions arrived at were as follows :—

(1,) In nearly every case the area of lung involved decreased, if it did not clear up entirely.

(2,) Auscultation bore out the results of percussion, vesicular respiration replacing in a greater or less degree morbid breath-sounds; in those cases which were classed as cured, the departure from health is only such as is due to the results of every continued pneumonic process.

(3,) Secretion was diminished even in the cases marked only "improved," and entirely absent in others.

(4,) Bacteriological reports in most of the cases bore out the results obtained in physical and other examinations.

(5,) The general condition of the patients improved in the large majority of cases, even when physical examination did not show any great improvement.

(6,) The use of the remedy was not attended with any danger to the patient.

(7,) Finally, antiphthisin does seem to have *curative*, and not simply palliative, qualities.

My experience of antiphthisin has been limited to four cases: In one of these after twenty-nine injections of doses ranging from 1 to 10 milligrammes, amounting in all to 174 m.m. in a period of thirty-seven days, there were no indications of improvement and the patient declined to continue the treatment. In another case of advanced phthisis, after ten injections of 1 to 10 m.m. amounting in the aggregate to 55 m.m., in ten days, the patient complained so much of the supposed soreness in his back from the needle punctures that he also declined further treatment. Neither of these cases can be considered as evidence against the utility of the drug. In the third case, one of chronic phthisis complicated with disease of the vertebræ, the result was altogether satisfactory, and is worthy of a more detailed report. In the fourth case, one of rapidly progressing tubercular pulmonary phthisis, a course of injections amounting to 35 c.c., in six weeks, was followed by an entire subsidence of all active mischief, the temperature became normal, and the sputum ceased, whilst at the same time the physical signs showed very decided improvement in the condition of the lungs.

The **Serum Treatment** of phthisis has made little progress. A few results of Maragliano's method have been reported,[34] but no definite conclusions can as yet be drawn. Dr. Paul Paguin,[35] of St. Louis, gives some cases in which striking improvement followed the use of a specially strong serum.

Intra-tracheal Medication[36].—A method of local treatment with incidental constitutional effect, little practised, but much to be commended in suitable cases, is the introduction of medicaments into the trachea and bronchi by means of a syringe with suitably curved nozzle to be inserted between the vocal bands. A nozzle of hard rubber is usually the best, though a metallic one may be used if necessary. A number of nozzles pierced in various ways should be provided with each barrel; one may have a single perforation at the end; another may have two very small perforations; another may have a closed end, and have two or more small openings upon the sides. In this way large or small streams may be projected and the force and direction modified. The

barrel of the syringe should hold two fluid-drachms (8 cubic centimètres). Oily solutions are preferable, as they run down along the sides of the trachea more slowly, adhering more closely to the mucous membrane, and thus produce less distress than watery solutions. **Menthol** is probably the best of the active agents employed, although **Creasote, Guaiacol, Eucalyptol, Terebene** and the like are available. From 2 to 5 grains or minims are to be used to the drachm of menstruum, which latter may be olive oil, or one of the forms of liquid petrolatum, or a mixture of these. Sometimes a little glycerine assists in making the solution; sometimes almond oil is added to give a more agreeable odour. The manipulation is simple and easily acquired by one who understands laryngoscopic manipulation generally. It should always be performed under guidance with the mirror. The nozzle of the syringe is inserted between the vocal bands during inspiration and the contents of the barrel are discharged with a gentle but rapid motion during the contraction of the glottis and expiration which follows. Sometimes the first few injections cause distress, but this is quickly overcome. In many cases when the injection is dexterously made no distress is caused. In some cases it is advisable to tell the patient to lie down upon one side after the operation, in order to direct the current of medicament by gravity towards the bronchus of the dependent side. Injections may be made daily or less frequently according to the effect.

Intra-bronchial Medication.—During the three years Dr. Joseph Muir[37] has practised intra-bronchial medication about forty patients have come under personal observation, most of them suffering from tuberculous disease in various stages, in which, for the most part, the bronchial irritation was due to the pulmonary lesion. More or less improvement resulted in every case as a consequence of continued intrabronchial injections.

K. Stepp[38], the introducer of **Bromoform** in whooping cough, has obtained good results from its use in other lung conditions, more especially with tuberculous but apyretic patients showing no signs of pulmonary softening, but which, nevertheless, present a cachectic state, with abundant expectoration. He has obtained a decrease of expectoration, and an increase of appetite and weight, and a betterment of the general health by the administration of 4 to 6 capsules daily, each containing 0·5 gm. of bromoform. The treatment may be continued for several weeks without interruption.

A useful form[39] for treatment of cough in phthisis is the following:—

Codeine	4 grains	Syrup of Virginian Prune	2 drachms
Spirits of Chloroform	1½ drachms	Water	to 4 ounces

A teaspoonful frequently, to allay hacking cough unattended with much secretion.

Night-Sweats.—Mr. A. Kebbell,[40] of Flaxton, York, advocates the use of **Ammonium Chloride** in even advanced cases of pulmonary phthisis. He generally gives it internally in doses of 7½ gr. taken in milk every three or four hours, and finds that it is followed by great increase of expectoration, improvement in sleep and appetite, and diminution of night-sweats.

After several years of careful clinical experiment, Dr. Henry Conklin[41] finds **Agaricin** to be the most successful of the remedies tested. It can be used for any length of time, and has no disadvantages. Repetition does not weaken its power. Dr. Conklin reports that the remedy stopped the sweating in three-fourths of the cases, and diminished it in one-eighth ; in the rest of the cases it failed.

To check the night sweating of patients **Picrotoxin Pills** are useful : Picrotoxin $\frac{1}{60}$ of a grain ; sugar of milk and glycerine of tragacanth, enough to make a pill. Give one at bed-time, and repeat if necessary.[42]

Hydrastis Canadensis, the "National Medical Review" says, is being used with excellent results for controlling night sweats. If a single dose of 20 or 30 drops of the fluid extract does not suffice, then give 25 to 30 drops two or three times daily. In nearly every case the night sweats will be overcome.[43]

M. A. von Székely[44] recommends **Cotoine** as being very useful in checking night sweats of phthisis, which he gives in doses of about 4 centigrammes. It has a bitter taste. It may be given in the form of a solution, or be made up with sugar into cachets. M. A. von Székely also employs **Tincture of Belladonna** in combination with **Liquor Arsenicalis**, and considers this combination to be more successful than preparations of belladonna alone. Externally, a lotion for the body may be used with advantage, as **Hydrate of Chloral**, 6 grammes, and distilled water and alcohol, each 100 grammes.

Climatic Treatment.—Dr. Samuel West,[45] says that sunlight and fresh air are potent remedies for phthisis, and those places are best for phthisical patients where they can be longest out of doors in bright sunshine and in pure air. A good climate is a place to get well in or to convalesce in, and in order that a phthisical patient should derive full benefit from such a climate he must be more or less convalescent—*i.e.*, getting better, or at any rate not getting worse ; in other words, the phthisis must not be in the acute or active stage. Even in the best of climates the patients must still be treated as invalids or convalescents, and must be taken ordinary care of, such as prudence and common sense would suggest. Yet how many patients act as if the climate would do the impossible, running risks and doing things which at home

none but the healthy and strong would do, and such as an invalid should never attempt!

Dr. Arkle,[45] advocating the "Open-air treatment of Phthisis," enumerates the essentials of a good sanatorium, and says that without doubt the most important quality must be the purity of the air in the locality where the patient was treated. The author considered that with proper care and selection suitable places could be found in the British isles. In the matter of diet and medicinal treatment the digestive functions were kept active and vigorous, as much milk taken as possible in addition to a good full diet, the patient being kept as long as possible in the open air in the day and with the windows of his sleeping room open at night; little then remained to be done except to prevent him contaminating his surroundings with sputa or other tuberculous dejecta.

There are now six sanatoriums in Germany at which consumptives are treated by constant *exposure to air at a low temperature*. Currents of cold air are allowed to pass through the bedroom at night, and during the day as much of the time is spent in the open air as possible. The pure cold air quiets cough, lessens temperature, arrests night sweats, improves appetite, and mod'fies or arrests the course of the disease.[47]

Dr. E. L. Shurly,[48] advocates the **Hospital Treatment** of pulmonary consumption from two points of view: First, in the belief that the treatment of the disease is much more effectual at a hospital or sanatorium than at a residence or open health resort; and, second (on the part of radical sanitarians) in the belief that the disease is contagious, and that isolation of the patient from the healthy individuals surrounding him is necessary to prevent the further spread of the disease.

Hydrotherapy has been advocated by Winternitz.[49] Aberg's method is the best. He distinguishes three grades in the water treatment: (1,) Bathing the neck, back, face, and chest at first rapidly with a sponge squeezed out, and subsequent rubbing of these parts until dry. Later this may be done morning and evening. Reaction is obtained in the open air or in bed; (2,) Pouring water over the head, neck, back, face, and chest, with subsequent drying; (3,) Using the full bath, which only lasts a moment. Aberg recommends water at 0° C. for the washing and douching, at from 17° to 18° C. for the full bath. Winternitz prefers water at rather a higher temperature. Instead of Aberg's douche, in the second grade the author employs friction with water at 7° or 8°, and he uses a cold shower instead of the full bath. This apparently heroic treatment is well borne and liked by the patient.

Physical Treatment.—Weaver[50] recommends after a full inspiration to hold the breath for a moment by closing the glottis. The effect is

increased if, during the holding of the breath, the lower chest is compressed with the hands. After a few weeks the inspirations become much fuller and the tension developed greatly increased. The arms should be raised in order to get the fullest inspirations. These efforts at forced expiration should be continued for ten to fifteen minutes every two hours during the day—before arising in the morning and after retiring at night. The patients should be under constant medical supervision, and at first the efforts must not be too violent. During hæmorrhage and for a week after it is completely stopped, pulmonary gymnastics should be suspended. To overcome muscular atrophy about the chest and to increase its expansion, the patient may learn the use of Indian clubs and dumb-bells and resort to them regularly.

Exercise and Expansion of the Chest.—Dr. Jacob Teschner[51] showed tables and photographs, illustrating chest expansion and lung capacity as increased by systematic gymnastic exercise which had been carried out under his supervision in eight cases of spinal deformities. In one case the capacity of the lung was increased forty cubic inches in two months. Respiratory gymnastics have been advocated by Dr. Harry Campbell,[52] who states that such exercises benefit not only by developing the lungs, and thus diminishing their liability to disease, but by facilitating the flow of blood and lymph.

(In the "Medical Annual" for 1892, page 385, we give illustrations describing the method employed by Dr. Percy Wilde for exercising the lungs in early stages of phthisis.—*Editor.*)

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PITYRIASIS RUBRA PILARIS. *P. G. Unna, M.D., Hamburg.*
Norman Walker, M.D., Edinburgh.

Morton reports a case in which he gave a fair trial to thyroid feeding without any benefit. The patient got better under **Baths** and the external application of **Salicylic Acid** and **Tar.**

REFERENCE.—"Journ. of Dermatology," July, 1896.

PLAGUE (Bubonic). *James Cantlie, F.R.C.S.*

Plague recurred at Hongkong in the month of December, 1895, and continued to be prevalent, in a semi-epidemic form, for seven months. The most notable feature of the recurrence, as compared with the epidemic of 1894, is that Europeans were more liable to be attacked. No form of medicinal treatment known seems to have any influence on the arrest of the disease, the death rate being as high during the recurrence as during the '94 epidemic. The chance of recovery amongst Europeans is decidedly much greater than when the Chinese are attacked; but no specific drug is accredited with the betterment. **Stimulants**, alcoholic and medicinal, are the sheet anchor of success, and the European assimilates them better than the native.

Dr. Yersin, a French bacteriologist, has produced a **Serum** for which he claims curative powers. He has already used the serum on several cases in Canton and Amoy, and with apparently good results. This is the only attempt at a specific for the disease, and it is to be hoped that beneficial results may ensue.

In September, 1896, the disease broke out in Bombay. Its sudden appearance so far from the seat of recent activity, namely, the Far East, is peculiar and exceptional. The outbreak may be but a

continuance of the Chinese epidemic carried to Bombay, owing to the frequent communication by vessels trading between China and India. So far as is known infection can be carried both by human beings and by rats; and ships may have been the means of bringing the disease by these agencies to Bombay.

Since the epidemic of plague appeared in Bombay a considerable amount of work has been done by Dr. Surveyor in connection with the bacteriology of the disease.

One of his notes reads as follows: "A drop of blood was obtained on a sterile cover-glass and placed on a sterilized slide. The edges were at once sealed with paraffin. This specimen showed numerous small micrococci-like bodies, which moved about rapidly; there were only a few bacilli resembling the plague bacilli to be seen. Are these minute bodies spores?" The question is a very pertinent one, and may be the initiation of the life-history of the parasite.

Concerning the question of the relation of the seizure of rats and plague, Dr. Surveyor remarks: "A live rat was killed and examined in the Byculla (a non-infected) district of the town, on September 29th. No plague bacilli were found. Another live rat from the same district was killed and examined on October 2nd, when plague bacilli were found. On October 3rd a case of plague was announced as having died in the Byculla district. Is this a coincidence?" Certainly it does not yet clear up the point as to whether the rat is the primary infector or no. The death of the human being, occurring on the day following the first observance of bacilli in the rat, shows only a contemporaneous infection, with the balance of initiation slightly in favour of the human being, as the rat was yet alive.

PLEURISY. *R. Shingleton Smith, M.D., B.Sc., F.R.C.P.*

Diagnosis—The "Plumb-line Sign" in the diagnosis of pleural effusion has been described by Pitres[1] in some lectures on the Physical Signs of Pleural Effusions. He speaks of the deformity arising from effusion, and its effect on cyrtometer-tracings or measurements of the two sides of the chest. Owing to the positive pressure exerted by an effusion, the affected pleural cavity becomes rounded, and increases in size at the expense of the sound, which is dragged over towards the affected side, the lower ribs of which assume the position of inspiration. As a result the sternum, with its fixed upper end as the centre, becomes rotated, and the ensiform cartilage is displaced, so that, supposing a plumb line were dropped down the middle line, it would be from 2 to 4 c.m. away from it (hence the name *signe du cordeau*). Thus cyrtometer tracings or measurements, which are usually taken from the spinous processes behind to the middle line

of the sternum, give a false impression of the relative size of the two sides, those on the affected side being too small and those on the sound too large by the amount of deviation of the ensiform cartilage from the plumb line, which should therefore be taken instead of the mid-sternal line. This sign, though of theoretical, is not of much practical value in the diagnosis of pleural effusions, since other conditions which cause an increased pressure on one side of the thoracic wall, such as pneumothorax, unilateral emphysema, and tumour of the lung, can produce a similar deformity.

The *wave phenomena* in pleural effusions have been associated with the name of Tripier for ten years, but have recently been investigated by Bard.[2] The vibrating wave of Tripier is not quite the same thing as the feeling of intercostal fluctuation also described by Dr. T. H. Kellock,[3] who states that it requires a little practice, but whenever the sensation is thoroughly appreciated it is easily recognized again. Both would be useful but for the existence of other and more reliable signs of pleural effusion.

TREATMENT.—Dr. Le Fevre[4] states that to hasten the absorption into the blood-vessels, diminution of the watery elements of the blood by diuresis and catharsis has been used. Dependent on the same principle is the treatment by **Dry Diet.** This consists in withdrawing all liquids for three or four days, compelling the blood-vessels to slake their thirst from the well of the affected pleura. Few patients are willing to endure the annoying features of this plan. A modification is to gradually reduce the quantity of liquid exhibited, taking as the guide the amount of urine voided. Each successive day the quantity of liquid given is smaller than the amount of urine passed. All these plans of treatment have succeeded, and likewise have failed, in diminishing the amount of the effusion. The longer the fluid remains stationary in the pleural cavity, the greater is the tendency for coagulation of the fibrin factors to take place on the surface of the pleura, and thus seal the opening of the lymphatics; when the pleurisy has been attended with marked inflammatory changes in the subpleural tissue, the lymph channels are closed and absorption is impossible. When these conditions exist it is necessary to remove the fluid by **Thoracocentesis** or **Incision.**

The advisability of removal of the effusion by thoracocentesis when there is advanced tuberculosis of the lungs demands consideration. One of the reasons why pulmonary tuberculosis is so resistant to treatment is the never ceasing activity of the lung. We can immobilize a tuberculous joint, but have devised no apparatus to accomplish this for the lung.

Fluid effusion into the pleura, by allowing the lung to retract and stopping all motion of the affected side, gives the needed rest, and permits those changes to take place which tend to arrest the advance of the tuberculous process. I have frequently seen aspiration of the fluid followed by rapid extension of the disease, and in four cases by general tuberculosis.

What the fluid does for the protection of a whole lung, localized pleuritic adhesion does for the part bound down. All who have seen much of pulmonary tuberculosis have noted how the occurrence of a localized adhesive pleurisy has been followed by a more chronic course and even arrest in the pulmonary process. I am more and more impressed that pleurisy in pulmonary tuberculosis is a conservative process. Nature is frequently prodigal in her attempts to combat morbid processes, and the secondary pleuritic adhesions tax our diagnostic resources and therapeutic judgment to the utmost to decide on a safe plan of treatment. I believe harm frequently follows the forcible distension of the lungs and the breaking up of these adhesions.

Dr. Beverly Robinson[5] does not think that thoracocentesis in pleurisy should be regarded in any sense as a dangerous operation. On the contrary, he considers it a very innocent one. He has advocated and practised it for many years, and he has yet to see a case in which any subsequent evil results could properly be attributed to it. He expressed the view that, whenever a notable quantity of fluid is present in the chest, it is proper, it is judicious, it is in fact almost imperative to remove it by aspiration. He does not think it good treatment to wait for the production of a large amount of fluid.

Regarding the proportion of tuberculous and non-tuberculous pleurisies, the speaker thought this varied according to the class of patients we have to deal with. In the City Hospital, for instance, we are apt to see many more cases of tuberculous pleurisy than we do in private practice or in hospitals which have a good class of patients.

Dr. Charles E. Quimby does not believe that the withdrawal of the fluid in tuberculous cases is frequently followed by a rapid extension of the tuberculous process. If the fluid is removed and the nutrition of the lung neglected, the patient will very likely do badly, but if the nutrition of the lung is properly looked after by stimulating the circulation, by expanding the lungs, etc., the diseased area is put in better condition and in a large majority of cases the result will be beneficial to the patient.

Dr. Samuel West[6] directs attention to the occurrence of albuminous

or serous expectoration after paracentesis for serous effusion. There were three explanations given of the phenomenon: (1,) Perforation of the lung during paracentesis, and the discharge of the pleural effusion through the lung; but the difference of the chemical characters of the two fluids showed that this explanation could not be correct; (2,) The absorption of effusion by the lung; (3,) Œdema of the lung, and this was the only satisfactory theory. In the non-fatal cases this œdema must be due to some transitory condition, and was probably in most cases connected with the sudden distension of the lung after it had been collapsed for some time. In the fatal cases some organic lesion was generally found in addition which would account for the result. In some of them the lesion was such as would cause obstruction either of the vessels of the lung or of the bronchial tubes, and possibly also of the lymphatics; in others there was disease of the opposite lung—for example, general pleural adhesion or morbus cordis. The present instance was the only one which had come under the author's observation out of a very large number of cases of pleural effusion.

Dr. Frank W. Merriam,[7] referring to sequelæ, said pleurisy always damaged the membrane somewhat, and the more or less thickened pleura, with its adhesions, reminded the patient by twinges of pain of his former trouble. Deep breathing and exercise were recommended by some to break up the adhesions and allow of more motion of the chest wall. Atelectasis from too long compression of the lung; emphysema from too rapid removal of the effusion; displacement of the heart; a weakened chest and constitution favouring tuberculosis, etc., were among the sequelæ. If we knew more about the function of the pleura we could understand better the effects of disease of that membrane.

Lépine,[8] after reporting a case, remarks that the conditions necessary for a pleural effusion to *transmit the cardiac pulsations* are: (1,) The lung must be completely compressed; (2,) The mediastinum must be rigid; (3,) The diaphragm must have a certain tension; (4,) Probably other not well understood conditions, among which may be the presence of false membranes. Lépine believes that if pulsation were looked for carefully, it would be found more often than might be expected from the few cases published (less than sixty altogether). (See also "Empyema.")

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PNEUMONIA. *R. Shingleton Smith, M.D., B.Sc., F.R.C.P.*

Dr. Andrew H. Smith[1] comments on the variations in the prognosis in pneumonia with sex, age, time of year, habits, and the presence of certain chronic diseases; that it is more frequent in men, more fatal in women; rare before two years, the mortality increasing with age; that the habitual use of alcohol, a pre-existing rheumatic habit, the presence of diabetes and chronic nephritis are always of grave significance. As regards the character of the valve-sound in the pulmonary area he finds that the intensity of this sound may be looked upon as a measure of the degree of obstruction to the blood-current in the lungs, and hence the information furnished by the pulmonary valve is much more reliable than that supplied by the radial pulse, inasmuch as the chief peril is of failure or exhaustion of the right heart. He has observed that severe cases in which there is marked leucocytosis do better as a rule than similar cases in which the increase of white-cells is relatively slight.

Dr. W. N. MacArtney[2] enters an urgent plea for a reconsideration of the etiology and treatment of pneumonia. For a more careful and systematic study of the changes which occur in the lesser circulation, pulmonary artery, capillaries, and veins, including also the bronchial vessels; for the use of diaphoresis as a rational and conservative mode of treatment, as a safe and powerful agent for the purpose of aborting pneumonias, and as an antipyretic of remarkable efficacy; for a more general recognition of the fact that failure of the right heart is the usual cause of death; and for venæsection in certain cases of pneumonia in the early stage; also in the late stage when it becomes imperative, or as a *dernier ressort.* By his method he claims to have reduced the mortality from 16 per cent. to 1·66 in a series of one hundred and twenty consecutive cases. Few drugs were used, and the chief reliance was placed on free and long-continued diaphoresis.

Dr. Clement Dukes[3] gives an analysis of the cases of pneumonia occurring amongst four hundred adolescents during a period of twenty-five years. The number of cases of pneumonia arising during this period was forty-four, with only one death, giving a mortality of 2·27 per cent. The cases were secured and transferred to the sanatorium at the earliest possible moment, and placed under the supervision of a day and night nurse. The large number of cases which occurred during the year 1891 (and the following years) arose from the influenza epidemic. Now every case of influenza was as carefully isolated as if it had been scarlet fever and, however slight the illness, was retained in bed for a minimum of five days, taken care of for five

days more, and then disinfected as thoroughly as if it had been scarlet fever, before returning to school; yet, notwithstanding all this care, there arose during that year alone twelve cases of pneumonia out of eighty-nine cases of influenza, a proportion of 1 in 7·4, evidencing the severity of the epidemic.

TREATMENT.—Gruss says he finds the **Digitalis** and **Strophanthus** treatment far more frequently successful in the catarrhs of emphysematous patients than in croupous pneumonia. The bronchial catarrh and dyspnœa often subside with surprising rapidity. If these drugs fail, he gives **Diuretics**. He finds that diuretin acts better when arterio-sclerosis exists as a complication, but it has also acted better than digitalis in cases of aortic insufficiency without arterio-sclerosis. He orders it in these cases in broken doses, 1 or 2 grains a day, whereas the dose in dropsy and ascites must be much greater.

Since December, 1894, Dr. Corin[4] has treated altogether twenty-six pneumonias which he could accurately and regularly follow and in which he has systematically used **Digitoxin** from the first visit. Of these twenty-six, there died two, one who was emphysematous and one who was in agony when first seen. Properly, therefore, there were twenty-four cases, with no deaths. In these twenty-four cases he saw the patients before the third day after the beginning of the disease. In nineteen of these cases he is certain the remedy was given before the lapse of thirty-six hours after the beginning of the disease. Three of these patients vomited nearly the whole dose, hence the process remained uninfluenced; but in one of these a part of the medicine could have been absorbed, as vomiting occurred a half hour after the administration of the dose. In this case the pulse and temperature were favourably influenced, and the pneumonic process changed for the better only gradually. The complete downfall of the disease occurred after a second administration of the remedy, on the third day of the disease. He usually prescribes :—

℞ Digitoxin (Merck) gr. $\frac{1}{10}$ | Alcohol āā q. s. ad solv.
Chloroform | Aq. dest. f℥vij

Sig.—One-third to be taken every six or eight hours.

Dr. Ernest Glass,[5] believing that digitalis treatment was not satisfactory, endeavoured to jugulate pneumonia by means of **Pilocarpine**, after Skiklai's method, but his results did not appear to justify a continuance of the treatment.

Skiklai[6] employs pilocarpine in all cases and in all stages of pneumonia as an aborting remedy on the occurrence of the first symptoms, at the height of obstruction, "in appropriate cases," also as a preventive. He orders pilocarpine in doses which are double the ordinary

maximal doses. The effect of pilocarpine, according to this author, is :—

(1,) Mechanical; through the profuse secretion evoked by the remedy there result an undermining loosening, and separation of the croupous membrane.

(2,) Chemical; "the transudate is robbed of its fibrin, whence the further formation of the croupous membrane must cease."

Skiklai speaks as follows concerning the activity of the remedy: (1,) Pilocarpine is a specific against croup in the broadest sense of that word, and therefore against all croupous diseases—conjunctivitis, rhinitis, croupous pneumonia, etc.; (2,) Its action is immediate; in pneumonia recovery occurs in two or three days; (3,) Not only is the duration of the disease considerably shortened by pilocarpine, but also the mortality is brought down to nothing; (4,) In appropriate cases by timely administration the remedy has a preventive action; (5,) Pilocarpine can be given in twice the officinal dose without having to fear any injurious results whatever.

Dr. Poulet[7] uses $\frac{5}{6}$ of a grain of pilocarpine hydrochlorate—less for children—in all cases, even of old patients, several of whom were over seventy years. Generally two such doses in two days are sufficient, but occasionally the third dose may be necessary on the following day. Then the cure is completed by the use of **Ammonium Acetate** in solution. He reports but four deaths among one hundred and eight pneumonias.

Dr. De Renzi[8] gives favourable results in ten cases from **Serum-therapy.** During the past year he has treated ten cases of pneumonia with anti-pneumonic serum prepared in the following manner: The animals are inoculated with a minimum non-lethal quantity of pneumonic virus, the dose of which is gradually increased until a strong immunity is produced. From these immune animals the serum is taken, and injected into the patient. Only severe cases were selected for treatment. In every case (that is, in ten) cure was obtained; in one case the temperature came down on the third day, although there were the signs of diffuse hepatization of the lung. Of five other cases admitted during the year, and not treated by serum, one died. Although the author admits that his cases might have recovered without the serum treatment, he considers his results decidedly encouraging, as pointing towards a real and effective treatment of pneumonia.

Dr. J. Edward Squire[9] strongly advocates the **Stimulant Treatment** of pneumonia. We have here an illness which is of short duration but often of great severity, and recovery is almost certain if we can keep

up the patient's strength till the fever is past. As most of us know by experience, exhaustion may come on so rapidly that if we wait until it shows itself treatment may be too late to counteract it. We may, however, do much to prevent this excessive exhaustion by commencing with stimulant treatment from the first.

M. Comby[10] says excellent effects are yielded by **Balneotherapy** in the pneumonia of quite young infants. Applied at a temperature of 25° or 20° C., according to age and circumstances, the cold bath is most serviceable in reducing temperature, restoring lost tone, and slowing the pulse and respiration. Baths at 25° C. are quite well supported by even very young infants. The application of this method determines the onset of the crisis on the fifth instead of the seventh day, and so materially shortens the duration of the disease; it is, moreover, the best means of obtaining prompt defervescence in the pneumonia of adults. At the Aubervilliers fever hospital M. Siredey has derived great advantage from the employment of cold baths in the treatment of broncho-pneumonia consecutive to specific fevers; and M. LeGendre corroborates their efficacy in all congestive complications of eruptive fevers. Hayem declares that at the Hospital St. Antoine the most fatal disease of all is pneumonia, and that eighteen out of twenty of these patients are "alcoholics." During the first two years (1879-80) of his physicianship at that hospital the death-rate was 50 per cent.; but with the institution of the cold-bath treatment the mortality fell to 27 or 28 per cent., and for some time past this mortality has further diminished to 8 or 10 per cent., an improvement ascribed to a new treatment especially devised for the benefit of alcoholics. Employed in the *crèche* attached to his wards, Professor Hayem finds the cold baths more powerful for good against pneumonia than when used for adults.

Dr. Charles Wilson Ingraham,[11] being persuaded that popular feeling is extremely antagonistic, and perhaps justly so, to the use of the "ice pack" in the treatment of pneumonia, and therefore that the physician who uses it and assumes the whole responsibility of the outcome of the case must be possessed of considerable courage and confidence, adopts the method of applying **Heat** by what he calls the *pneumonia jacket*, an arrangement for the circulation of hot water through coils of rubber tubing so arranged as to cover the whole chest. (This apparatus is described in detail in the "New York Medical Journal," May 18, 1895.)

The application of heat to the chest in acute pneumonia, as here described, accomplishes several distinct objects in a very decisive manner: (1,) It hastens the various stages of the pneumonic process;

(2,) The high degree of heat not only hastens the disease processes, but *sustains the vitality* of the consolidated lobes; (3,) It effectually prevents further extension of the pneumonic process; (4,) It sustains lobular vitality, and consequently the lobe will not be so prone to chronic disease or to recurrent attacks of pneumonia; (5,) It prevents complications; (6,) It stimulates respiration, strengthens the heart action, and favours the performance in a normal manner of the various pulmonary functions, as regards both oxidation of the blood and elimination of carbonic acid and other respiratory products; (7,) It relieves pleuritic complications; (8,) It controls temperature.

Dr. Hayem[12] reports the employment of **Amyl Nitrite** in large doses by inhalation, in the treatment of both pneumonia and pulmonary tuberculosis. Pneumonia patients used compresses upon which 15 drops of the pure drug were dropped, the compress being held close to the nose and mouth, deep inspirations being made the while. When this quantity has evaporated the amount is repeated again, and perhaps twice or even thrice. In this way fifty drops may be employed in the course of five hours. The physiologic phenomena of flushing, pulsation, pressure, respiratory and circulatory acceleration, cough, dyspnœa, etc., soon disappear and leave no bad effects. The treatment is continuous throughout the illness and for a few days beyond defervescence. The dosage must depend upon individual tolerance. Other therapeutic measures are not contraindicated. It is not contended that amyl nitrite thus used shortens the duration of the disease or affects the temperature curve, although it mitigates the symptoms referable to the lungs. The effect is attributed to an influence upon the pulmonary circulation.

The results which the author obtained in patients of low vitality and a very unfavourable hygienic status were very favourable. He had sixteen deaths in seventy-seven cases of non-tuberculous pneumonia.

The use of **Oxygen** in the treatment of pneumonia has been advocated.[13] As soon as the diagnosis of acute lobar pneumonia or of influenza pneumonia is made, inhalation of oxygen for ten minutes every hour or fifteen minutes every two hours should be instituted, and continued so long as the patient remains comfortable. If, notwithstanding this treatment, omitted only during the night when the patient is resting quietly, respiratory or circulatory embarrassment increases to a point exciting apprehension of a fatal issue or even of a dangerous course not necessarily fatal, the period during which oxygen is administered should be increased to one-half hour in every hour, or the inhalation even be continued without intermission for hours.

In cases of broncho-pneumonia in children, Dr. Morell[14] has employed **Aromatic Spirit of Ammonia** hypodermically, in doses of 15 to 60 minims (1 to 4 c.c.), according to the age of the child, as a rapidly diffusible stimulant. Through this medicament the respiratory centre is stimulated, the power of expectoration increased, and the action of the heart sustained.

The injections cause a smarting and burning sensation for a minute or so, but the children do not seem to mind it very much. The action of the drug is noticed almost immediately; the face loses its livid colour, becoming flushed, the pulse beats stronger, and respiration is deeper.

Maldaresco[15] uses applications of **Guaiacol** to the posterior surface of the thorax, corresponding to the part of the lung which is involved. The temperature falls, cough diminishes, expectoration is easier, and the tongue becomes more moist.

During two years the number of cases so treated amounted to one hundred and one: of these, eighty-three recovered, and eighteen died.

REFERENCES.—[1] "Med. Record," May 9, 1896; [2] Ibid., Sept. 19, 1896; [3] "Lancet," Mar. 28, 1896; [4] "Therap. Gaz.," Nov. 15, 1895; [5] Ibid., Nov. 15, 1895; [6] Ibid., Nov. 15, 1895; [7] "Amer. Journ. Med. Sci.," Mar., 1896, and "Les nouveaux remèdes," 1895, No. 22, p. 507; [8] "Brit. Med. Journ.," Mar. 28, 1896; [9] "Lancet," April 4, 1896; [10] "Medical Age," Nov. 25, 1895; [11] "New York Med. Journ.," Mar. 28, 1896; [12] "Med. Record," Jan. 11, 1896; [13] "Philadel. Polyclinic," April 4, 1896; [14] "Amer. Med. and Surg. Bulletin," Oct. 15, 1895; [15] Journ. des praticiens," Mar. 29, 1896.

PNEUMONIA (In Australia). *David Hardie, M.D., Brisbane.*

During the past winter Brisbane has been visited by an epidemic of pneumonia, there having occurred during the month of July thirty-five deaths against an average of only seven for the previous five years. In order to find out whether the condition of the weather that prevailed at the time had any special peculiarity that may have contributed towards this high death rate, atmospheric data were supplied by the chief weather bureau, and these when examined were found to possess certain features of interest worth noting. The table given below is a summary for the last six years. In it we specially observe a low mean temperature in the shade and on the ground (the effect of which would be all the greater after a comparatively high temperature the previous month of May—64·5 against a mean of 64 for previous years), a high range of temperature, low relative humidity and low amount of cloud, a greater prevalence of west and south-west winds and greater velocity of wind. These are

conditions that are usually found coincident with a high barometer, but curiously enough the barometer is comparatively low. This is no doubt due to the very low elastic force of vapour, or in other words, to a low absolute humidity of the air—a condition that allows of loss of heat by radiation at night to an extreme degree.

Moreover, the greater force of the wind indicated more rapid atmospheric movements from the cold tablelands of central Australia, and therefore more rapid evaporation from the body.

	MEAN FOR JUNE AND JULY, 1896.	MEAN FOR JUNE AND JULY FOR PREVIOUS 5 YEARS.
Barometer	30·934	30·090
Mean Temperature in the shade	57·0	58·3
Mean Temperature on the ground	39·1	41·5
Daily range of Temperature	21·5	19·4
Relative humidity	65 per cent.	70 per cent.
Vapour tension	·297	·339
Amount of cloud	2·7	3·5
W. and S.W. winds	38 times	33 times
Velocity of wind	10½ miles per hour	9 miles per hour
Rain fall	2·08 inches	2·65 inches
Rainy days	7	6

In treatment, Dr. Francis and others speak highly of **Chlorine Mixture** with **Quinine,** recommended by Burney Yeo for typhoid fever. It combines the properties of a germicide and an antipyretic.

In the later stages of the disease, when the usual crisis period is deferred, and when there is delirium and continued high temperature, and the patient seems altogether in a hopeless condition, **Cold Sponging** of the trunk for half-an-hour, and repeated every two hours if necessary, has been followed in several instances by the happiest results. The application of poultices in the early stage does not seem to contra-indicate cold sponging in the later stage.

PNEUMONIA (in Children). *Henry Dwight Chapin, M.D., New York.*

Dr. G. M. Swift[1] gives the treatment of pneumonia as pursued at St. Mary's Free Hospital for Children. The plan is to put the cases in a room warmed to 75° F., or above; to keep a kettle of water boiling in the room, and on the kettle to keep a vessel of **Beechwood Creasote** or pine needle oil, care being taken that the creasote does not boil down and become too pungent. The combination of warmth, steam, and evaporating creasote makes a soft, agreeable atmosphere,

which is most soothing to the inflamed and irritated mucous membrane, A child which has been coughing violently and frequently, when placed in such surroundings, quiets down and coughs but rarely. If an anodyne is needed because of pain, restlessness, or excessive cough, they are given from .1 to 3 grains of **Tully's Powder.** Where the secretion is very copious and watery, **Nitro-glycerin** is used with much freedom. If an expectorant is needed, the **Ammonium Chloride** or the **Liquor Ammoniæ Anisatus** in syrup of tolu is given; in cases where the cough persists, some preparation of creasote is administered internally. In lobar pneumonia, **Calcium Chloride** in doses of from 2 to 5 grains every two or three hours is given.

Dr. L. E. Holt[2] places much reliance upon **Counter-irritation** and **Inhalations** in the treatment of pneumonia. Counter-irritation is made by mustard, 1 part, and flour, 6 parts, this being used in the form of a paste to encircle the chest. It is left on only long enough to redden the chest, *i.e.*, five or six minutes, and repeated from three to eight times a day. Inhalations are used systematically in all cases, usually every three or four hours. For this purpose the child is placed in a closed tent in which steam is introduced from a croup-kettle. With the steam, creasote is usually vaporized, but sometimes turpentine or benzoin are substituted. The inhalation is continued from ten to twenty minutes at one time, and has been found more satisfactory in controlling cough than any other remedy hitherto employed. As a stimulant, whisky is freely used.

Dr. J. P. Crozer Griffith[3] has found that when the respiration is becoming much embarrassed, the heart failing and the general strength waning, as it is especially apt to do in broncho-pneumonia, a plunge of from one to three minutes into a **Bath** of from 103° to 105 F., will often rouse the failing powers in a remarkable manner. Counter-irritation is used occasionally, oftenest in the form of **Turpentine Stupes** to relieve pain.

REFERENCES.—[1] "Archiv. Ped.," April, 1896; [2] Ibid., April, 1896; [3] Ibid.

PREGNANCY (Disorders of). (See also "Puerperal Eclampsia.")

Thomas More-Madden, M.D., F.R.C.S., Dublin.

Varnier[1] and his associates publish a Röntgen ray picture of a uterus at three and one-half months, which had been taken from the body of a woman dying of pernicious anæmia. The picture gives an indistinct outline of the fœtus, which appears much darker than the surrounding contents of the uterus. Dissection of the specimen confirmed the diagnosis made from the picture.

The writer's experiments with the Röntgen rays upon pregnant

women, made during the month of February, 1896, showed that it is perfectly possible to obtain an outline of the living fœtus in the body of the mother. The difficulties to be surmounted are the thickness of the tissues and the distance at which the Crooke's tube is necessarily placed from the fœtus itself. Anatomical specimens of uteri and their contents, removed from the body, should occasion no difficulty whatever. By varying the electric force employed and the time of exposure it is undoubtedly possible to obtain a useful picture of the contents of the living womb.

Dr. Handfield Jones,[2] whose previous researches on cardiac complications of pregnancy are already well known, reviews very fully the former literature and present knowledge of the conditions referred to, as well as contributes much original matter of importance from his own extensive clinical experience. In this place, however, we must be content to quote briefly his practical summary of the conclusions he has thus arrived at. These are thus stated: (1,) Both by clinical evidence and by logical deduction we are justified in accepting the fact of hypertrophy of the left ventricle occurring in normal pregnancy as proven. In delicate and feebly developed subjects it may sometimes be absent, and in these cases signs and symptoms of cardiac insufficiency are likely to occur; (2,) A certain amount of dilatation of all the chambers of the heart does normally occur in pregnancy; (3,) Failure of the ventricle has a distinct effect upon the course of pregnancy. In the early months it leads to abortion, and in the later months to premature delivery; (4,) The heart, during pregnancy and the puerperium, is specially liable to undergo fatty degeneration. This may be due to retrograde changes taking place after delivery, or may depend on the premature setting-in of these changes, together with an insufficiently oxygenated state of the blood, dependent partly on anæmia, and partly on lung disease; (5,) The condition of the muscular heart-wall is of more importance during pregnancy than the valvular lesion; many women with valvular lesions pass through their early pregnancies without any sign of heart failure, but as the heart muscle becomes deteriorated by the strain of repeated pregnancies they show increasing evidence of cardiac insufficiency; (6,) Of all the forms of valvular lesion mitral stenosis of a marked degree is the most disastrous; this is largely due to the extra strain thrown in these cases on the pulmonary circulation and the right heart. The increased arterial tension, the increased volume of blood, and the increased development of the left ventricle, all tend to produce dilatation of the left auricle and the right ventricle. The pulmonary circulation is thus kept continually congested, unless

pronounced hypertrophy of the right ventricle takes place. At the close of delivery, when more blood collects in the right side of the heart, the risk is increased, and the danger reaches its maximum.

TREATMENT.—The question is often brought before us: Is marriage to be permitted when the woman is the subject of chronic heart disease? Provided a valvular lesion is well compensated, and the muscular tissue of the heart can be judged to be sound, and provided also that the patient is a young woman in whom processes of repair may reasonably be expected to go on at a healthy rate, there would be no just reason for forbidding her to marry.

Induction of Abortion and Premature Labour.—We have already seen that abortion and premature labour often occur spontaneously in cases of failing heart; but the question is frequently asked whether it is good treatment to induce delivery in patients suffering from active heart mischief during pregnancy. Clearly, when the heart has already been exposed to the toil of seven or eight months of utero-gestation, and is showing signs of rapid failure, it is not prudent to suddenly throw upon it the effort of labour. The cases in which we should resort to the induction of premature labour are those in which it seems desirable at any cost to relieve the diaphragm from the upward pressure of a large abdominal tumour such as the pregnant uterus. With regard to abortion in the early months, I think that the case is different. In many recorded instances of serious cardiac complications rendering the latter part of pregnancy, labour, and the puerperium a period of continued danger, and resulting too often in death, it is clear that symptoms of commencing failure, such as palpitation, breathlessness on exertion, and malaise, had been noted as early as the third or fourth month. In such a case I fail to see the justification for exposing a failing heart to the strain of pregnancy during the remaining months of utero-gestation, and would advise immediate abortion. The emptying of the pregnant uterus at the fourth month cannot be compared with the strain of labour in the last two months of utero-gestation. I should be disposed to recommend the same course in a patient who had heart disease and who had passed through three or four confinements safely, for, should she become pregnant again, clinical experience demonstrates that the risk she encounters is vastly increased. No physician would lightly interfere with the course of pregnancy, but it is folly to allow things to take their course when science has taught us that the course is almost certainly laid on the downhill track. In conducting the labour at full term the point may be considered as established that the second stage should be made as short as possible, and that forceps or version are most valuable aids.

Regarding the action of free bleeding during the third stage of labour, I would earnestly bear testimony to its useful effect. A free loss tends to relieve the right heart from undue engorgement, and considerably lessens the risks of sudden stoppage of the heart. Equally useful is the application of leeches over the liver or heart during the puerperium when blueness of the lips and face, with dyspnœa and pulmonary troubles, tell a tale of an over-distended and failing right ventricle.

Drugs.—Of all drugs **Strychnia** and **Nitrite of Amyl** have seemed to me to be the most useful. The latter drug, by dilating the arterioles and keeping the blood in the peripheral circulation, gives temporary relief to the failing right ventricle, and lessens the work of the over-burdened heart. The action of strychnia as a cardiac tonic is too well known to need notice here.

Nephritic Complications.—Mynlieff[3] insists that when a woman with chronic nephritis becomes pregnant, the induction of abortion is indicated on account of the immediate peril of the patient (which increases as pregnancy advances), the certain continuance of the morbid process in the kidneys themselves, the great tendency to flooding and abortion, and the small prospect of the development of the fœtus up to term, even if it lives so long.

Demelin[4] estimates the frequency of cardiac disorders in pregnant women as 1 in $\frac{23}{100}$ per cent. He draws attention to the importance of auscultating the maternal heart in these cases. The great majority of these patients—70 per cent.—suffered from heart-lesions during first pregnancy. A considerable number were affected with dyspnœa and hæmorrhage of various organs of the body during pregnancy. The majority of them went to term, and were delivered of living children.

In treating these patients during labour each case demands study from its individual peculiarities. In the event of sudden death *post mortem* Cæsarean section should be at once performed. A patient's ability to pass through labour successfully will depend upon the integrity of the heart-muscle and the condition of the liver and kidneys. Where these organs are profoundly affected, pregnancy must be interrupted; where, however, no immediate danger threatens the patient, she should be treated by appropriate medication and diet, especial attention being paid to the condition of the blood, and pregnancy should not be interrupted unless absolutely required.

Vomiting.—In a case of persistent vomiting during pregnancy, other remedies failing, Kehrer[5] tamponed the os and cervix with sterilized gauze soaked in **Glycerine**; the nausea was at once relieved,

and by repetition of the treatment every few days, the patient was carried on until the thirty-third week when labour was induced, and the patient was delivered of a living child.

Dr. Weill[6] states that every form of vomiting during gestation can be relieved by a 20 per cent. solution of **Menthol** in olive oil; dose, 10 drops on sugar whenever nausea appears.

REFERENCES.—[1] "Annales de gyn.," March, 1896, and "Amer. Journ. Med. Sci.," June, 1896; [2] "Lancet," Jan. 18, 25 and Feb. 1, 1896; [3] "Therap. Gaz.," May 15, 1896; [4] "L'obstetrique," No. 1, 1896, and "Amer. Journ. Med. Sci.," June, 1896; [5] "Central. für Gyn.," 1896; [6] "Gazette des hôpitaux," Nov. 28, 1896, and "Therap. Gaz.," June 15, 1896.

PROCIDENTIA RECTI. *Herbert William Allingham, F.R.C.S. Eng.*

Under the title of "Prolapsus of the Rectum, etc.," Dr. James P. Tuttle[1] has published a long paper on what we have agreed to call *Procidentia Recti.* With regard to the two ordinary kinds of procidentia he has little new to say; but to the third kind of procidentia, namely, when the upper part of the rectum descends through the lower part, but does not appear outside the anus, he has devoted considerable attention. He seems to agree with our own theory of procidentia frequently occurring from a lengthy mesentery, and has experimented upon the dead subject with a view to the suturing of the meso-rectum to the abdominal wall, which has been advised by ourselves and others. He himself, however, has never practised radical measures in the third variety, and has contented himself with reduction of the procidentia by the use of a Wales bougie, to flush the colon with a saturated solution of **Boric Acid.** However, he has not been able to watch the future history of many of these cases, and often cannot say whether or no the procidentia returned, and admits that "a temporary cure at least may be obtained." Considerable discussion was aroused on the reading of this paper before the New York County Medical Society, some disagreeing with Dr. Tuttle's views as to the comparative frequency of the third form of procidentia, another surgeon recommending for procidentia a hypodermic injection of **Strychnine**, and a third stating that procidentia occurred by "an anatomical fault," and that the remedy was to support the long fibres of the levator ani by means of a strip of adhesive plaster passed along the line of the gluteal fold, to be worn, especially during the action of the bowels.

REFERENCE.—[1] "Med. Rec.," Jan. 11, 1896.

PROSTATE (Diseases of). *E. Hurry Fenwick, F.R.C.S.*

The chief interest of this section has been centred during the last year in the examination and criticism of the results of White's opera-

tion (castration for the relief of symptoms occasioned by prostatic hypertrophy).

The Results of Double Castration in Hypertrophy of the Prostate.—J. William White[1] reviewed the theoretical, experimental, and clinical work on this subject up to the end of 1895 as follows :—

(1,) The function of the testis, like that of the ovary, is twofold: reproduction of species, and preservation of the secondary sexual characteristics of the individual. The need for the exercise of the latter function ceases when full adult life is reached, but it is possible that the activity of the testis and ovary in this respect does not disappear coincidentally, and that hypertrophies with closely allied organs, like the prostate and uterus, are the result of this misapplied energy. This hypothesis would increase the analogy between the fibro-myomata of the uterus and the adeno-fibromata of the prostate, which, from a clinical standpoint, is already very striking, and is further strengthened by the almost identical results of castration in the two conditions.

(2,) The theoretical objections against the operation of double castration have been thoroughly negatived by clinical experience, which shows that in a very large proportion of cases (that is, very approximately, 87·2 per cent.) atrophy of the prostatic enlargement followed the operation ; and that there is disappearance by great lessening in degree of long-standing cystitis (52 per cent.); more or less return of vesical contractibility (66 per cent.); amelioration of the most troublesome symptoms (83 per cent.); and a return to local conditions not very far removed from normal (46·4 per cent.) may be expected in a considerable number of cases.

(3,) The deaths have been twenty in one hundred and eleven cases, a percentage of 18; but of these there seem to be thirteen that may fairly be excluded in an attempt to ascertain the legitimate mortality. In patients operated upon under surgically favourable conditions, *i.e.*, before the actual onset of uræmia, or before the kidneys have become disorganized by the two factors rarely absent in advanced cases, backward pressure and infection. This would leave a mortality of 7·1 per cent., which will probably be decreased as advanced knowledge permits of a better selection of cases. It is important to note that even in the desperate cases which make up this series of deaths, fifteen (75 per cent.) showed improvement of symptoms by shrinkage of the prostate before they died.

(4,) Comparison with other operative procedures seems to justify the statement that, apart from the sentimental objections of aged persons on the one hand, and the entirely natural and very strong

repugnance to the operation felt by younger persons, castration offers a better prospect of permanent return to nearly normal conditions, than does any other method of treatment. The relatively greater degree of improvement in successful cases should be considered as well as the mortality in comparing the operation with the various forms of prostatotomy and prostatectomy. So, too, should the absence of any risk of permanent fistulæ, peritoneal or suprapubic, the ease and quickness with which the operation can be performed, and the possibility of avoiding altogether the use of anæsthetics, which in these cases are of themselves dangerous.

(5,) The evidence as to unilateral castration is at present contradictory, but there can be no doubt that in some cases it is followed by unilateral atrophy of the prostate, and in two cases at least it has resulted in very marked improvement of symptoms. It is worthy of further investigation.

(6,) From experiments on dogs it has been shown in nearly every case in which the vas deferens was tied or divided on both sides, that without much change in the testicles there were beginning atrophy, and considerable loss of weight of the prostate. Those experiments need repetition and confirmation, as the absence of corresponding testicular change seems to make the results somewhat anomalous. It is possible that the inclusion or severance of small, but important, nerves may account for the effect on the prostate.

(7,) Alteration of the vascular constituents of the cord, or of the whole cord, produces atrophy of the prostate, but, in his own experiments, only after first causing disorganization of the testis.

The foregoing summary of White's original article has been repeated in this year's issue to remind the reader of the original ground taken up by that surgeon. (For earlier criticism compare "Medical Annual," 1896, p. 500.)

During the last twelve months the operation has been widely and fairly tried, and much discussed. The reports taken as a whole tend to show that an important addition has been made to the resources of surgery in dealing with the obstruction caused by the hypertrophied prostate. It is, however, at present impossible to arrive at a clear understanding of the possibilities and limitations of the operation.

Senn[2] strikes a sound note in the course of an address on "Some of the Limits of the Art of Surgery." He made a strong plea in favour of conservatism in the treatment of prostatic hypertrophy. He fears that when castration on aged men for this disease becomes common property, and is endorsed by surgeons of high standing, it will be seriously misapplied, and that the operation will be performed

for stone in the bladder, chronic cystitis, and vesical cancer. It is not always easy or possible to make a positive differential diagnosis between simple hypertrophy of the prostate and some of the conditions which simulate it so closely. In doubtful cases it would, he thinks, be advisable to make the diagnosis sure by a suprapubic cystotomy before resorting to a mutilating operation, rather than remove the testes and afterwards discover that the patient is suffering from encysted stone or malignant disease of the bladder or prostate. Castration is so easy an operation that every tyro in surgery will be tempted to practise it on willing subjects suffering from obscure bladder affections complicating hypertrophy of the prostate gland. Castration deserves a fair trial at the hands of competent surgeons in well selected cases, but future evil is to be apprehended not so much from the proper use as from the abuse of this procedure.

Cabot,[3] in an able *résumé* of the collected records of the last year, attempts to determine the position of the operation by considering its rate of mortality and the restoration of function obtained by it. He states the mortality of castration for prostatic hypertrophy to be 19·4 per cent., and compares with this the present death rate (estimated by himself) as being 20 per cent. of suprapubic prostatectomy ; and after making allowance for unpublished cases of death, he arrives at the following conclusion :—

In the matter of mortality the operation of prostatectomy has a slight advantage over castration. It seems probable that, with later statistics reflecting the last improvements in the technique of prostatectomy, this advantage would be further increased. His further conclusions are :—

(1,) Prostatectomy has the further advantage that it allows of a thorough examination of the bladder and of the discovery and correction of other conditions not before suspected. Stones are frequently removed in this way without adding to the gravity of the operation. In several reported cases of castration the absence of improvement has led to the subsequent discovery of stones which have required other operations for their removal.

(2,) Prostatectomy has, on the other hand, the disadvantages that it confines the patient for a longer time, and that it is sometimes followed by a fistula. This occurred in one of the forty-two cases used in this paper.

(3,) It is too early to know whether any permanent loss of vigour follows castration when done on old men. The nervous effects which sometimes immediately follow the operation suggest a suspicion that with the testes the system may lose some tonic effect exerted by those organs.

(4,) The functional results of the two operations seem, at present, to be as nearly equal as possible, and the tendency to relapse shows itself in about the same proportion of cases after either operation.

(5,) The reduction in the size of the prostate after castration is largely due to a diminution of congestion. Later a degeneration and absorption of considerable portions of the gland may occur. The glandular elements are particularly affected by this atrophy.

(6,) Castration would seem to be especially efficacious in cases of large tense prostates, when the obstruction is due to pressure of the lateral lobes upon the urethra.

(7,) Castration is of but little use in myomatous and fibrous prostates.

(8,) Prostatectomy has its especial field in the treatment of obstructive projections which act in a valvular way to close the urethra. There is, however, no form of prostatic obstruction which a skilful operator may not correct by prostatectomy.

(9,) Prostatectomy is then applicable to more cases than castration, and is especially to be selected when an inflamed condition of the bladder makes drainage desirable.

Finally, Dr. Cabot asserts that if further experience confirms the present statistics, "We shall be able to express the facts thus to our inquiring patients. You have eight chances in ten of getting through the operation (White's) all right, and if you are successful in this, you have again eight chances in ten, or a little better, of getting very substantial relief from your urinary difficulties."

White,[4] in an editorial, criticises these conclusions of Cabot, and points out that he has seriously overrated the mortality. For the ease and celerity with which the operation can be performed have led to its adoption in many cases of disease at a stage both local and general, which would have been regarded as a positive contra-indication to any other operator. Moreover, White shows that Cabot has not been sufficiently careful in eliminating cases in which death resulted from causes other than the operation. White considers the mortality in ninety-two cases just collected to be about 6·5 to 9·5 per cent.

The entire question of the operative treatment of enlarged prostate was discussed at the British Medical Association Annual Meeting at Carlisle. Dr. David MacEwan[5], of Dundee, reviewed the literature of White's operation, and made several important additions to our knowledge, and his independent and coincidently published conclusions form an admirable addendum to Cabot's article (*q. v.*).

Dr. MacEwan has collected as many as possible of the reports of cases that have been published since White's paper appeared, now more than a year ago. The number of operations has been fifty-two. Of these forty-two were reported as more or less successful; in four cases there was no improvement, and six patients died. In only 38 of these cases were the reports given with some degree of fulness; and as regards diminution of the size of the prostate, it was stated to have taken place in seventeen of the thirty-eight; in six no diminution had occurred, and of the remainder, although relief of symptoms was frequently stated to have been obtained, the effect upon the size of the prostate was not given. The death-rate, it will be observed, is slightly less, but corresponds pretty closely with the total mortality in White's table of cases. All the deaths appear to have been due either to the presence of advanced morbid conditions or to the occurrence of subsequent complications.

The return of the functional power of the bladder, which is a notable feature in some of the reported cases, appears to be due mainly to the removal of the obstruction. The results show that *the vesical contractility is often not so hopelessly destroyed in chronic cases, as we have hitherto supposed.* That it should return, after attacks of acute retention, or after the use of the catheter for weeks or months, is what we might reasonably expect; but that, after many years of habitual catheterism, voluntary urination has yet been restored, as the reports of *a few* of the cases show, is very striking and remarkable.

Rovsing reports a case of a man eighty-five years of age, who had not passed a drop of urine, except by artificial means, for eleven years, and who, two months after the operation, was able to urinate with normal frequency, and so freely that the residuum at the end of twenty-four hours amounted but to 30 c.cm.; Levings, that of a patient seventy-seven years of age, who, thirty-six days after operation, passed urine by the urethra the first time for eighteen years; and Charlton that of a patient seventy-seven years of age, who was able to discard the catheter after having used it for eight years.

Dr. MacEwan considers that the beneficial effect of White's operation at first is probably due to the engorgement of the testicle, brought about by the interruption to the outflow of fluids. This engorgement would interfere with the functions of the testicles, including the production of the physiological product which is necessary for the nutrition and growth of the accessory sexual glands. These glands would consequently begin to waste, and the process would become complete if in course of time atrophy of the testicles occurred.

He concludes :—

(1,) That in a considerable proportion of cases, castration induces more or less atrophy of the enlarged prostate ; and that this atrophy is probably the result of the loss of a physiological substance formed by the testicles which is essential to the nutrition of the gland.

(2,) Atrophy occurs most readily in the soft and elastic form of hypertrophy, but it may also take place in the hard, even when associated with general arterio-sclerosis.

(3,) That the best effect is obtained when there is general enlargement of the gland. Sessile enlargement of the median portion may yield to castration, but intravesical outgrowths are, as a rule, more suited for prostatectomy.

(4,) That cystitis, when not far advanced, may be relieved or cured.

(5,) That high grades of cystitis, associated with septic infection of the kidneys and with distressing bladder symptoms, will be more benefited by drainage of the bladder.

(6,) Vesical contractility may be restored even after years of complete catheterism.

(7,) Although voluntary power does not return, castration may still bring relief to the patient if catheterism has been frequent, painful, and difficult.

(8,) With the exception mentioned, castration will give as good results as prostatectomy, with a smaller death-rate.

Dr. Kelsey[6] describes the condition of a prostate six weeks after castration for the usual symptoms of enlarged prostate. There was no evidence of atrophy. The lobes of the prostate weighed 45 gms., and the report from the microscopist showed that there were absolutely no atrophic changes. The enlargement was hypertrophic and not fibrous.

Dr. Griffiths, of Cambridge, on the other hand, examined a prostate three weeks after castration, and found an amazing amount of atrophy not only of the interstitial tissue but of the glandular elements.

Kummel[7] has performed castration for eight cases of prostatic hypertrophy, and also collected fifty-nine other cases. As a result of his experience, he holds the operation is the true remedy. He has never noticed psychoses—such, for instance, as Faulds reports—and gets his patients out of bed the day after the operation.

Rovsing,[8] who was formerly opposed to castration in cases of prostatic hypertrophy, reports a case, the good results of which have led him to change his views on the value of this treatment.

In an earlier contribution on this subject this author, whilst recognizing as an undoubted fact the rapid atrophy of the enlarged prostate

after removal of both testes, held that it was *a priori* very improbable that in cases of complete and chronic retention, the bladder would ever regain its capacity for contraction. It was, he argued, useless to remove the obstruction when the bladder had lost its function of expelling urine. The persistence of retention, in spite of regular and repeated catheterism, was, in his opinion, a conclusive indication that the function of the bladder had been hopelessly abolished. The case which has upset these conclusions is that of the man, aged eighty-five, cited above. This unexpected result followed an operation which had been performed simply with the object of facilitating the introduction of the catheter. The clinical part here recorded renders it very difficult, the author points out, to explain the occurrence of complete retention in cases of prostatic enlargement, by the views hitherto held by surgeons. The restoration of the contractile capacity of the bladder, after so long a period of apparently hopeless abolition, is an observation quite opposed both to the views of Guyon on co-ordinate arterio-sclerosis, and to the purely mechanical explanation, according to which the primarily healthy bladder, in its struggles to overcome the obstruction caused by the enlarged prostate, becomes at first hypertrophied, and subsequently over-distended, atrophied and paralyzed. The persistence of the latter morbid conditions during a period of eleven years would, it is argued, have resulted in irretrievable loss of the contractile function of the bladder. Whether retention be due to alterations in the size and form of the diseased prostate, or whether the loss of vesical contractility and prostatic hypertrophy are two co-ordinate results of a single and as yet unknown cause, are questions which remain open. A correct explanation, it is believed, may be attained by a close study of the interesting and obscure connection between the testis and the prostate, the existence of which has been proved by the unquestionable results of castration in cases of prostatic hypertrophy.

Samuel Alexander[9] advocates the performance of prostatectomy by combined suprapubic and perineal incision. The bladder is washed immediately before the operation with nitrate of silver (1 in 6,000). The bladder is opened in the ordinary manner above the pubes, and the intravesical portion of the prostate examined. The supra-pubic opening is then covered with gauze, and the patient placed in the lithotomy posture. The membranous urethra is opened upon a staff, the floor of the urethra being thoroughly cut from just behind the bulb back to the apex of the prostate. Two fingers of the left hand are passed into the bladder by the suprabubic wound, and by these the prostate is pressed downward into the perineum. With the fore-

finger of the right hand the surgeon begins the enucleation, which is performed entirely through the perineal opening. The outer sheath of the prostate is broken into by the finger just beneath the mucous membrane of the prostatic urethra, and the entire prostate is shelled out from within its sheath by digital dissection. The mucous membrane of the bladder and prostatic urethra with the underlying muscular tissue is stripped up, but is not opened. The right and left lobes are first removed, after which, if there is a middle projecting tumour, this can be pressed downward into the perineal wound and enucleated in the same manner. A perineal tube is now inserted into the bladder, and also a suprapubic tube. The after treatment consists in daily washings of the bladder. The upper tube is removed on the sixth day, and the lower tube three days later, after which the bladder is washed by catheter through the perineum for a few days. A full-sized sound is passed at the end of the second week, and then every five days until the perineal wound closes. The wounds have usually healed in the course of five weeks.

Division of the Vas Deferens as a substitute for Orchidectomy.—Directly Dr. White's proposal was tried and proved of the utmost value in relieving certain forms of obstruction due to the enlarged prostate, many surgeons attempted the lesser operation of resecting a small piece of the vas deferens.

Griffiths[10] gives the results of investigations undertaken with the view of determining the structural changes which supervene in the testes after ligature of the spermatic blood-vessels in the dog, in which animal the vascular arrangement of the testis is the same as in man. Ligation of the spermatic artery in a full-grown dog, the author has found, leads within a few days to great diminution in the bulk of the testis, caused by rapid destruction from degenerative changes in the seminal tubules, but after a time the remaining tubules may recover to such an extent as to be again capable of producing spermatozoa. Ligation of all the spermatic veins leads to great swelling from engorgement of the veins and extravasation of blood into the intertubular connective tissue, and to necrosis of the epithelial cells in the seminal tubules. This condition would ultimately cause almost complete disappearance of the seminal tubules and atrophy of the gland. Ligation of the spermatic artery and veins in full-grown dogs may lead, according to conditions not yet known, to (1,) Sloughing of the testis; (2,) Complete atrophy; and (3,) Temporary fatty degeneration of spermatogenetic cells in the animal, which may be followed by complete recovery.

Allessandri[11] gives the following as the results of an experimental

investigation upon the ligation of the spermatic cord, either as a whole or in part. Ligating the vas deferens is followed, after a long time, by atrophy of the testicle and epididymis; the parenchyma shows fatty degeneration, and connective tissue increases. Ligature of the veins causes atrophy; ligature of the deferential artery also causes this result, but more slowly.

Ligature of the internal spermatic artery, or the pampiniform plexus alone, causes some changes of nutrition, but these are limited. Ligature of the spermatic artery and part of the veins causes hæmorrhagic infarct and degeneration, with epithelial death, and increase of connective tissue. The ligature of the deferential artery alone causes no injury. Excision of the nerve-fibres causes coagulation, necrosis of the epithelium of the testicle, and epididymis in isolated spots. At the French Surgical Congress, held in Paris, M. Guyon[12] approached the subject from the clinical side. He had performed bilateral resection of the vas deferens on two patients, the first of whom had suffered from incomplete retention for ten years, and latterly from frequency of micturition, demanding the constant use of the catheter. Rectal examination revealed considerable hypertrophy of the prostate. A few days after the operation the frequency of micturition diminished notably, and the catheter could be passed with more ease. At the end of a month the gland had decreased in volume.

The second patient came to him in about the same condition, and the operation gave a certain relief, but the prostate had not changed much in volume. In both patients the testicles remained normal.

A third patient, operated upon by M. Leguen, had suffered from complete retention for a month previously. The results of the operation were quickly manifest; the man was able to dispense with the use of the catheter for ten days at a time, a month after the resection. M. Guyon concludes that the above operation, although it could not pretend to the radical cure of hypertrophy of the prostate like the operation of total castration, yet it might take rank among those measures addressed to certain complications of prostatism.

Routier[13] reports three cases of resection of the vas deferens for enlarged prostate, the results of which confirm the view that in the treatment of this condition occlusion of the cord, whether total or partial, is just as effectual as, and less objectionable than, the removal of the testis. The author resects about an inch of the vas. Simple constriction of the vas deferens by a ligature, it has been found, is usually followed by restoration of its continuity. There are, the author states, two typical forms of enlarged prostate—one in which

the gland is very firm and indurated, and the other in which it is enormously swollen, and soft and elastic. It is only in the latter form, which is probably due for the most part to congestion, that division of the vasa offers a good prospect of success. Prof. Helferich[14] performed double vasectomy on ten cases of prostatic hypertrophy, and in every case found a satisfactory result at the end of two months. In only two cases was chloroform given, the other cases supported the pain without effort. The effect was almost constant in all the cases, micturition was greatly improved, but only in a few instances was the prostate diminished in volume.

Prof. Helferich does not pretend that resection of the vas deferens equals in efficiency double castration, but it frequently succeeds in improving sufficiently the condition of the patient, and as it is a benign operation, it ought to be tried.

Mr. Reginald Harrison[15] states that atrophy of the testis is a sequence in the human male of rupture or section of the vas deferens. It is probable that in a certain number of prostatic cases the amount of shrinkage of the gland necessary to make all the difference between a life of misery and one of comfort is comparatively slight. The author is disposed to think that division of one vas or both vasa is capable of providing in many instances the relief that is thus desired. Then there is the further consideration that, if the minor proceeding fails, castration may still be resorted to without prejudice. The best results have followed in cases where the prostatic enlargement was due rather to overgrowth of muscular tissue than to a preponderance of fibrous tissue. The difficulty of accurately determining these structural differences beforehand is an added reason why a tentative measure should, in case of doubt, be first undertaken. The author's method of operating is as follows: The vas is fixed beneath the skin of the scrotum by the finger and thumb, just after it enters the scrotum. A small vertical incision is made over the vas. Any connective tissue around the vas is separated by finger and forceps. The vas is looped up by a blunt hook, and the loop tied off below the hook with a silk ligature. The extraneous portion of vas is removed with scissors and the pedicle dropped into its place. The wound usually heals in the course of a few days.

In order, however, to find out the effect of resection of the vasa on senile hypertrophy and its consequences, Dr. MacEwan[16] examined the reports of cases in which the operation has been performed. In the home and principal foreign journals he found thirty-seven such cases reported; of these, twenty-six were stated to have been successful;

in three there was some improvement; four were unsuccessful, and four died from causes unconnected with the operation.

Although in a few of the cases it is mentioned that a distinct shrinkage occurred, still it is noticeable that diminution in the size of the prostate is not so much remarked upon as in the reports of cases of castration. Guyon says, with regard to his patients, that, although the operation brought relief, the diminution in the size of the prostate was scarcely appreciable. Helferich reports ten cases—one a case of avulsion of the vas—of which eight were successful, and in only a minority of these was a diminution in size noticed.

If it is the case that atrophic changes take place more slowly than they do after removal of the testicles, it is quite possible that the results of these cases have been published too early, and before the full effect of the operation upon the prostate was obtained. More decided statements are made respecting the effect upon the functional symptoms. Amelioration occurred in twenty-six of the cases, and was sometimes observed as early as the first or second week; the catheter could be passed more easily or urination took place spontaneously, the amount of residual urine decreased, and cystitis was relieved or passed off. These results are quite intelligible, even although the prostate actually showed no appreciable change, for, as Harrison has remarked, "the amount of shrinkage of the gland necessary to make all the difference between a life of misery and one of comfort is comparatively slight."

Harrison,[17] in a later communication, recommends that one vas should be resected at a time. The operation he has practised may be divided into two groups of cases: (1,) Those where only one vas has been divided; and, (2,) Those where both vasa have either been simultaneously resected, or with an interval of some days between the two. He has done twelve cases of single vasectomy, and ten of double. It will be seen that in this respect vasectomy has been practised on the same lines as castration, in some cases the operation being confined to one testis, whilst in others both have been removed. Of the twelve cases of single vasectomy, seven appear to have derived permanent benefit from the operation, whilst in the remaining five the results were either negative, or it was found impossible to trace the patients subsequently.

REFERENCES.—[1] "Annals of Surgery"; [2] "Boston Med. and Surg. Journ.," July 16, 1896; [3] "Annals of Surgery," Sept., 1896; [4] Ibid.; [5] "Brit. Med. Journ.," Oct. 10, 1896; [6] "Amer. Med. and Surg. Bulletin," Feb., 1896; [7] "Berlin. Klinik.," 1895, Heft 86; [8] "Centralblatt für Chir.," No. 2, 1896; [9] "New York Med. Journ.," Feb. 8, 1896;

[10] "Journ. Anat. and Phys.," Oct., 1895; [11] "Policlinic," 1895, No. 9; [12] "Med. Record," Dec. 14, 1895; [13] "Méd. mod.," No. 14, 1896; [14] "Med. Press and Circ.," Feb. 26, 1896; [15] "Lancet," Feb. 22, 1896; [16] "Brit. Med. Journ.," Oct. 10, 1896; [17] Ibid.

PRURITUS. *P. G. Uuna, M.D., Hamburg.*
Norman Walker, M.D., Edinburgh.

Any suggestions for the treatment of this condition will be valued. **Antipyrin,**[1] a drug which has for some time had a reputation in this condition, is favourably reported on more than once during the year. The following prescription is from the "Medical Record.":—

Ichthyol	10 parts	Ether	40 parts
Spirits of Wine, rect.	40 parts		

Sig.—Apply locally.

Salfeld recommends **Losophan** as an ointment, 3 to 5 per cent.

Pruritus Vulvæ.—Ruge[2] places importance on asepsis. All the parts should be thoroughly washed with soap and sublimate solution, and then smeared with **Carbolised Vaseline** 3 to 5 per cent. The method has proved very successful.

Madden[3] advises the use of a 1 in a 1000 **Sublimate Solution,** followed by 10 per cent. **Methyl-blue.**

Bulkley[4] recommends the application of a 1 to 2 per cent. solution of **Permanganate of Potass** to allay itching.

Scrotal Pruritus.—Brocq recommends the following treatment: Of a solution of phenol 20, glycerine 75, alcohol 25, water 300, one part is mixed with four parts of hot water. Gauze is soaked in this and applied. He warns against the indiscriminate use of antipyrin, chloral, etc.

Bock[5] has used an ointment of **Picric Acid,** 1 to 5 to 1000 in scrotal pruritus, when other measures had failed.

Climacteric Pruritus.—The following prescription is useful for this condition:—

Veratria	3 grains	Eucalyptus	
Lard	1 ounce	Eau de Cologne	āā 10 parts
Acetic Ether	5 parts	Tincture of Pyrethrum	50 parts

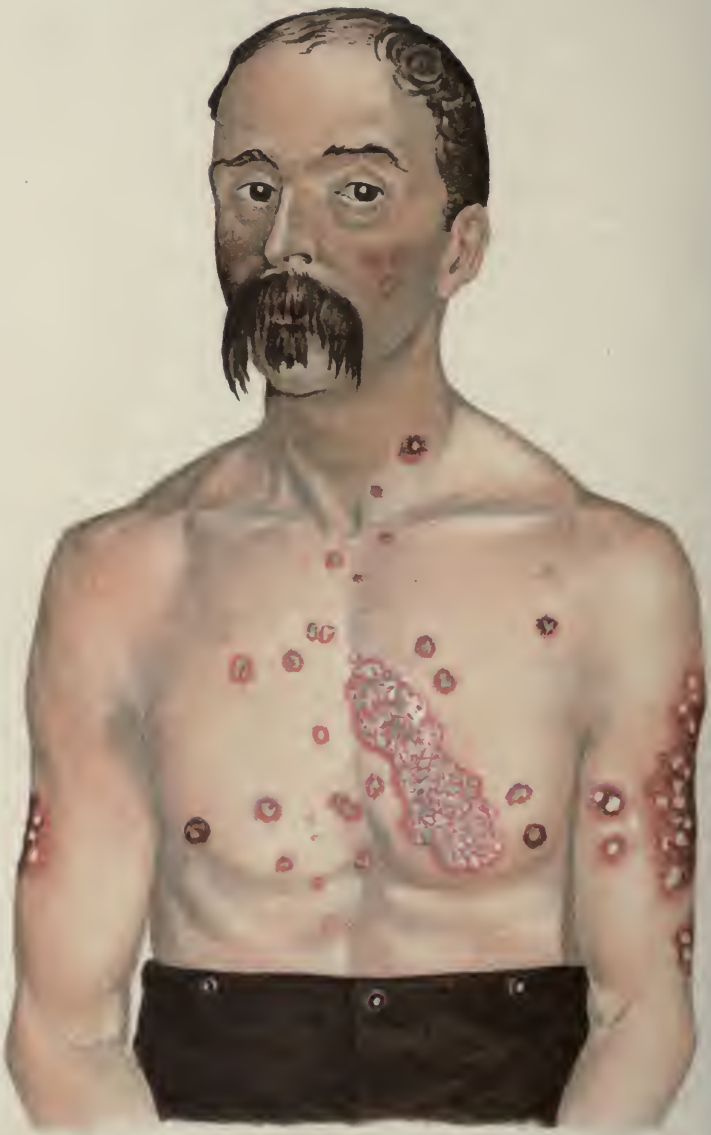
Dilute with four or five times its bulk in water and apply as a lotion.

REFERENCES.—[1] "Med. Record.," Nov. 30, 1895; [2] "Practitioner," Sep., 1896; [3] "La Médic. mod.," March, 1895; [4] "Therap. Gaz.," April 15, 1896; [5] "La Clinique de Bruxelles."

PRURITUS ANI. *Herbert William Allingham, F.R.C.S. Eng.*

Last year we described at full length the general and local causes of pruritus ani, and the treatment that seemed to be advisable in particular

PLATE XXIII.



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cases. Dr. Adler[1] has written on the local treatment, and the remedies he recommends are sensible. He refers to what he styles "Pruritus Ani *per se*," and writes, "all discoverable local or constitutional causes of this disease having been excluded, we are brought in contact with a class of cases, by no means small in number, to which the term 'neurotic' has been applied. That the condition is due to a neurosis, reflex or otherwise, I am not able, from personal observation, to confirm ; but it is a plausible explanation."

REFERENCE.—[1] "Philadelphia Polyclinic," Dec. 14, 1895.

PSORIASIS. *Norman Walker, M.D., Edinburgh.*

The coloured drawing (*Plate XXIII*), illustrates several points. It indicates the very common seat of the disease, and the close relationship which exists between seborrhœic eczema as expounded by Unna, and the disease recognized everywhere as psoriasis. I incline to agree with Unna that it is impossible to draw a hard and fast line between the two diseases, and that it is exceedingly likely that both are degrees of the same process. The patient's head shows that he has suffered from seborrhœa of the scalp. The hair is largely lost over the centre, and there is still seborrhœa to be detected all over the scalp. The large spot on the chest is matched by a corresponding one between the shoulders, and the spots visible (the painting is drawn accurately from a photograph) show that they are most numerous over the front of the chest, just as Unna describes. The lesions on the arms are also of interest. It has been stated by some observers that chrysarobin, applied to one part of the body, will cure psoriasis on another part. This has not been my experience, and this case was used to demonstrate the fact to my class. The patient was directed to rub chrysarobin ointment upon his arms, but to leave the chest untouched. It is pretty clear that the effect on the chest has been nil. On the arms it will be observed that a diffuse reddish-brown staining surrounds certain paler points. These points represent the original spots of the disease. The redness around is the dermatitis induced by the chrysarobin, and it is a too common practice to arrest the treatment at this stage on account of this irritation. If this be done a great deal of the advantage of treatment is lost. The application should be continued until the whole patch has a uniform dusky red colour. Most patients have sufficient fortitude to endure the discomfort, if it be clear to them that it is for their advantage, and if the treatment be arrested at this stage, the disease—it cannot be directly said to return, for it has never been cured—will certainly re-appear.

PSORIASIS. *P. G. Unna, M.D., Hamburg.*
Norman Walker, M.D., Edinburgh.

Cantrell[1] reports favourably on **Oil of Copaiba**, 5 minims three times a day. The drug has long been a favourite with McCall Anderson.

Joseph believes **Gallanol** to rank next to chrysarobin and pyrogallic acid, as a local application. Internally, he considers **Arsenic** much preferable to iodide of potash. In the "British Journal of Dermatology," some two years ago, Dale James, of Sheffield, related a case where intense irritation had been caused by the use of gallanol.

In Brocq's[2] letter from Paris, he reports two cases of psoriasis treated by **Mercurial Injection**; 5 centigrammes of the yellow oxide of mercury were injected. In the space of three months there were seven injections, but after the sixth, all traces of the disease had disappeared.

M. Brault[3] reports on two cases which had previously been shown to the French Dermatol. Society as having recovered under the injection of **Yellow Oxide of Mercury.** Both cases recurred, and he proposed as an addition to the treatment to give the patient **Iodide of Potassium** internally.

Pearse[4] has, in an article on so-called gouty psoriasis, a very sensible protest against the use of such names. As he truly observes, "if the disease is psoriasis, it should be called so; but if gout, it should be called gout," and we would add the same with regard to syphilis.

Richter,[5] at the Berlin Dermatological Society, recommends the following ointment:—

℞ Ichthyol		Olive Oil	
Salicylic Acid		Lanolin	āā 10
Pyrogallic Acid	āā 3		

He has found this prescription of value in cases which resisted other treatment. Following Unna's advice, he gave internally at the same time dilute **Hydrochloric Acid** to prevent poisoning with the pyrogallic.

Campana[6] found that painting a sterilized infusion of pyogenic organisms on the skin had a beneficial effect on psoriasis.

REFERENCES.—[1] "Therap. Gaz.," June, 1895; [2] Journ. Cut. Dis.," Jan., 1896; [3] "Annales de derm.," Aug., 1896; [4] "Lancet," Dec. 14, 1895; [5] "Dermatologische Zeitschrift," Aug. 1896; [6] "Clin. dermosif. della R. Univ. di Roma," Jan., 1896.

PTOSIS (Congenital). *G. E. de Schweinitz, M.D.,* *Clarence A. Veasey, M.D.,* } *Philadelphia.*

A modification of Mr. Mules' operation for *congenital ptosis*, by the insertion of a **Permanent Wire Suture,** has been proposed by Dr. T. C. Evans.[1]

After the patient is anæsthetized, an incision is made three-eighths of an inch long in the free margin of the lid and about a sixteenth of an inch in depth, the site of the incision being midway between the outer and inner canthus. A second incision is then made just above the brow, three-fourths of an inch in length, extending through the integument and occipito-frontalis muscle (the most prominent part of the occipito-frontalis muscle having been determined and marked prior to the anæsthesia). Then a long, flat needle, with a flexible shank, having an eye very near the point, and carrying about six inches of No. 30 silver wire, is passed into the lid at the inner extremity of the marginal incision, upward between the orbicularis and the tarsus, under the brow, and brought out at the inner extremity of the incision above the brow. The needle is then withdrawn, leaving the wire in position. The other end of the wire is then passed through the eye of the needle, and carried into the outer extremity of the marginal incision, and brought out at the outer extremity of the upper incision, as in the first instance. The loop of wire is then drawn into the marginal incision, and the wound closed with four or five firm sutures. The ends of the wire are then passed through a perforated No. 1 shot, and traction is made until the desired elevation of the lid is secured. The shot is then pressed with pliers, and the excess of wire clipped off, leaving a quarter of an inch on each side of the shot. The superior incision is then closed with silk sutures, and dressed with iodoform gauze; the marginal incision is left without dressing. The sutures are removed from both incisions in forty-eight hours. If the effect becomes too great or too small at any time, an incision is made exposing the shot, which is easily felt, and the wire lengthened or shortened as the case demands.

REFERENCE.—[1] "New York Med. Journ.," Dec. 21, 1895.

PUERPERAL ECLAMPSIA.

Thomas More-Madden, M.D., F.R.C.S., Dublin.

In an exhaustive paper on this subject, Dr. H. R. Cotton[1] says the age of the patient is an etiological factor of considerable weight, the vast majority of patients being under thirty. Also the number of children borne, at least four-fifths of the cases being in primiparæ. Old primiparæ are thought to be more liable to the disease than those who are younger.

The percentage of eclamptics is much greater in plural than in single pregnancy. A woman illegitimately pregnant is more subject to the disease than married women, thus introducing a psychological element. Emotional disturbances, either of grief or joy, are conducive to its development.

Inactivity of the liver and kidneys, however, is the agent which is chargeable with more of these cases than any other. Albumin is almost always present in the urine either before or after the convulsion, and must always be looked upon as indicative of a tendency to eclampsia.

Heredity possibly plays a very insignificant part, if any, in its development.

When you have a pregnant patient who complains of headache, flashes of light before the eyes, dimness of vision, and epigastric pain, you may feel quite sure she is in danger of developing convulsions ; and when coupled with the above you find a scanty secretion of urine, and that albuminous, you may be certain convulsions will occur, unless nature is relieved in some manner. But all these premonitory symptoms may not be present in every case : the patient may complain only of the epigastric pain, which is a very constant symptom, or of headache or optical symptoms. Albumin may even be absent from the urine, and the kidneys be doing their full duty ; but be not deceived, some organ is disturbed in its action, else there would not be any cause of complaint, for pregnancy is a physiological state. If you fail to find albumin, look for creatin or creatinin in the urine. Inquire of the bowel functions ; it may be she is constipated, or her food is passing undigested. The liver is possibly torpid. Examine her skin and see if it is not dry and failing to perform its part in ridding the system of effete matter.

The prognosis for the mother is very grave, the mortality being certainly not less than 30 per cent. In a given case it depends to a great extent on the number and severity of the convulsions and the depth and duration of the coma. Also the amount of albumin in the urine must be taken into account in summing up the prospects. The longer and more difficult the labour, the worse the prognosis for the mother.

In a large percentage of cases the convulsions cease entirely when delivery is accomplished : in a less number they become feeble ; while in others they continue for a time in undiminished severity.

At least half the children are born dead ; most authorities make the fatality greater than half. The high temperature of the mother and the circulation of impure blood probably cause the death of the child in the majority of cases, but placental hæmorrhage is also accountable for death in many cases.

TREATMENT.—Prophylactic treatment is of vast importance, and the pregnant woman should be under the observation of her physician from the very time she becomes pregnant until the end of the puerperal

month. During this time the physician should *see* her at least once a month and make a careful examination of the entire body, especially the kidneys and bowels. He should secure at each of these visits a sample of urine for chemical and microscopical examination. He should not be satisfied at finding no albumin or tube-casts, but should test for creatin, creatinin, biliary salts, acetone, and indican, and should direct his attention to the alimentary canal, for decomposition is surely going on there, or there is some obstruction to the proper performance of function of the bowels, or the urinary revelations may be a warning that the nervous system is on a strain and lead him to give it the needed rest. The liver and bowels should be kept well to their duty. If constipation exists, the following may be used with benefit :—

℞ Aloin gr. ij | Ext. Hyoscyami gr. viiss
Podophyllin, gr. iv |
M. ft. pil. no. x. Sig.—1 or 2 at bedtime.

If the kidneys are deficient in action but no albumin or casts exist, **Citrate of Potassium** in 20-grain doses three times a day will be efficient. The patient should take a **Tepid Bath** every day to keep the skin in good condition. Thus far we have no cause to restrict diet or exercise : she will fare better in childbed if she keeps about her usual duties during pregnancy as far as possible without fatigue. Idleness is productive of despondency, which adds to the danger of eclampsia being developed.

But should albumin be found in the urine, the entire aspect of the case is changed. Her diet must then be curtailed, and if possible she should live on an absolute milk diet ; her exercise also must be carefully regulated, that tissue-waste may be lessened as much as possible, thus giving the kidneys less work to do. The bowels and skin must be kept in perfect order. **Lactate of Strontium** is reputed to have good effect in the presence of albuminuria, but no drug can be depended on to remove it, and the salvation of the woman depends almost entirely on restriction of diet.

It now becomes necessary to consider those cases in which, notwithstanding all these measures, the albumin not only persists but increases in quantity. If the woman has not yet reached the stage at which the fœtus is viable—viz., the end of the seventh month—we may and should persist in our efforts to carry her up to that time that the child may have a chance for its life.

We will say that the woman has reached the end of the seventh month and has albumin in the urine, which is increasing in quantity. What shall we do? If we try to carry her to term, she will most

certainly have convulsions, and every convulsion will lessen not only her chances of life, but her child's also. If we induce labour now, she may and she may not have convulsions, but she is not so likely to as she will be two months hence or during the time intervening. If you decide to wait until her time is out, she may be taken with a convulsion in your absence from home, and valuable time—possibly a valuable life—be lost before your services or those of another physician can be obtained. Everything considered, therefore, in the presence of an increasing quantity of albumin, I believe the physician comes nearest doing his duty when he induces labour, and that in a series of cases he will save more women and babies than if he tried to carry the patients to term.

We will now consider the management of cases in which convulsions have developed.

Tincture of Veratrum Viride is the *best* of all the many remedies that have been brought forward as worthy of trial in these cases. Chloroform may be given by inhalation until the veratrum takes effect, which will be within half-an-hour. If the woman is in labour or is undelivered, lose no time, but begin at once the manual dilatation of the os, and as soon as it is sufficiently dilated apply forceps and deliver. Of course the patient should be under chloroform during this operation, which need not consume more than one hour even when there is no dilatation to begin with. This may sound extravagant, but I will not now stop to describe my method of dilating the os uteri *per manu;* suffice it to say, my experience bears me out in the assertion.

The physician should not leave his post until the placenta is delivered, which I have usually found to be an easy matter. Do not wait for the uterus to expel the placenta, but deliver by Credé's method while the woman is yet under chloroform; and if this cannot be quickly accomplished, introduce an *aseptic hand* and remove it.

In the vast majority of cases, when the treatment above outlined is carried out, there will be no further convulsions. It is the treatment indicated by Nature, for she nearly always sets to work in the very beginning of the disease to empty the uterus.

If the convulsions continue after delivery, or develop after the birth of the child, the same medicinal treatment should be made use of. If the veratrum is not at hand, **Hydrate of Chloral** given either by the mouth or per rectum is of benefit. **Bromide of Potassium** is too slow to be of much service, but combined with other remedies may yield good results. **Morphine** is a favourite with many, but in my hands has not proved so useful as veratrum.

The after-treatment consists in keeping the bowels well open; administering an alkaline diuretic, and diaphoretics if the skin is dry; and, above all, a milk diet.

The bladder should always be emptied by catheter, as an over-distended bladder may be a factor in the production of the symptoms.

After the convulsions have been stopped, it is well to keep the pulse below 60 per minute for several days by 5-drop doses of veratrum viride repeated *pro re natâ*.

Zweifel[2] found from his hospital statistics that while he lost 32 per cent. of cases when treated by the expectant method, the mortality was reduced to 15 per cent. by rapid delivery.

Dr. J. G. Swayne[3] recommends **Venæsection** for eclampsia.

Dr. Hastings Tweedy[4] considers that convulsions do not owe their causation to the presence of toxins in the blood, but rather to the deposit of the poisonous substance in the nervous centres, and he believed that it was quite possible to quickly remove this substance from the endangered centres by depleting the blood of its water. Purging, sweating, or blood-letting would effect this; but the kidneys alone were to be relied on to directly get rid of the harmful substance. Of course, the administration of fluids in any form would completely counteract any good effects which might follow the above line of treatment. **Morphia** given hypodermically in large doses (up to 2½ grains in twenty-four hours) presented the greatest number of advantages with the fewest disadvantages in the treatment of eclampsia. All now knew that morphia had but slight if any effect on either the heart or kidneys. On the other hand, it limited the formation of toxins, controlled convulsions, dried up bronchial and salivary secretion, was a diaphoretic, and above all, prevented the onset of labour. No greater danger could happen to an eclamptic patient than that labour should set in.

REFERENCES.—[1]"Therap. Gaz.," Detroit, June, 1896; [2]"Amer Journ. Med. Sci.," March, 1896; [3]"Brit. Med. Journ.," Feb. 29, 1896; [4]"Lancet," Feb. 22, 1896.

PUERPERAL SEPTICÆMIA.

Thomas More-Madden, M.D., F.R.C.S., Dublin.

Gaulard[1] reports two cases of puerperal fever treated by injections of **Serum**; 10 cubic centimètres of Marmorck's anti-streptococcic serum were injected into the abdominal wall in each case. In the second, which proved fatal, the injection was repeated daily for four days. The next day the evening temperature was 101·5°, the general condition satisfactory, and recovery hoped for. No pain was felt at any time. After this the temperature fell steadily,

and reached normal. However, later in the evening two days before, she was seized with bilious vomiting and meteorism, the pulse remaining at about 120, and on the 4th and 5th her condition grew worse; she became semi-comatose, nothing controlling the vomiting, and died on the 6th. The author had never before seen a case of puerperal fever die during defervescence, and he believes the injections of serum were the cause of the vomiting. He fears that too much serum was used, for at the *post mortem* there was no sign of peritonitis or of any suppuration. The question of the maximum dose, to exceed which is not safe, has yet to be settled. He is sure this treatment does not do away with the necessity of using the curette, which clears away any *débris* and cleanses the centre of infection. If the germs have already passed into the circulation, the serum can be employed against them and their toxins.

Dr. H. L. G. Leask,[2] of Glasgow, reports a case of puerperal fever in which 4 cubic centimètres were injected, and the patient made a good recovery. The author says: "The beneficial effect of the serum was very marked, the change for the better was so abrupt that it resembled very much the crisis of a lobar pneumonia. . On the fifth day after the injection she sat up in an arm-chair for an hour to have her bed made, and by the tenth day ventured to go outside and take a walk. No bad symptom, locally or generally, followed the use of the serum; its influence was only for good."

Injections of **Creasote** have been used by Frank, of Cologne.

REFERENCES.—[1] "Presse méd. belg.," Nov. 30, 1805, and "Therap. Gaz.," June 15, 1896; [2] "Brit. Med. Journ.," June 20, 1896.

PYOSALPINGITIS. *Theophilus Parvin, M.D., Philadelphia.*

Dr. W. G. Wood[1] states that in every case of salpingitis he has seen in his practice the patient has complained of a severe pain over the liver, so severe in some cases as to lead to serious questioning on the part of the patient and her friends, and in one case on the part of counsel, as to the correctness of his diagnosis.

REFERENCE.—[1] "New York Med. Journ.," Oct. 25, 1895.

RECTUM (Cancer of). *Herbert William Allingham, F.R.C.S. Eng.*

Since the last issue of the "Medical Annual" there has been a continuance of the discussion with regard to the respective merits of colotomy and excision for cases of cancer of the rectum, and the present writer has published his own views.[1]

Most of the novelties of treatment practised or proposed refer to partial or complete excision of the rectum, and are frequently modifications of Kraske's operation. For a case of epithelial cancer involving

three inches of the gut and also the ischio-rectal tissues, Mr. Croly[2] excised the coccyx and the point of the sacrum, and detached and stitched back the intestine. This has been hitherto known as the trans-sacral operation, but Mr. Croly terms it "para-sacro-coccygeal excision," and considers it a good substitute for colotomy, except when there is intestinal obstruction.

Heidenhain[3] has described Rehn's mode of performing Kraske's operation.

Quénu[4] has extirpated 12 or 15 centimètres of the intestine with the anus, when the whole rectum is infiltrated. Inguinal colotomy is first done, followed by total excision, the rectum being exposed by Heinecke's modification of Kraske's operation.

Mr. Henston[5] has detailed cases in which he has performed excision by a method which, he claims, preserves the normal functions of the bowel, and is less likely than the perineal operation to result in stricture. He resects the diseased part, and stitches down the upper divided end of the bowel to the piece which has been left above the internal sphincter.

Mr. Littlewood[6] has noted cases of cancer of the rectum which he has successfully treated without a preliminary colotomy, the patients being in the prone position, recommended by Mr. Godlee.

REFERENCES.—[1] "Lancet," April 25, 1896; [2] "Med. Press and Circ.," Dec. 25, 1895; [3] quoted in "Brit. Med. Journ.," March 14, 1896; [4] quoted in "Brit. Med. Journ.," Feb. 15, 1896; [5] "Brit. Med. Journ.," May 25, 1895; [6] Ibid., May 30, 1896.

RECTUM (Cysts of). *Theophilus Parvin, M.D., Philadelphia.*

Retro-rectal Dermoids.—Schulze[1] describes an operation for the removal of two dermoid cysts situated behind the rectum, extending from a point just above the sphincter ani as high as the pelvic diaphragm. The writer believes that these tumours originate not from the ovary, but from the spinal canal or external skin, and advises their removal through an incision in the perineum, the ischio-rectal fossa being opened by a cut extending from the posterior third of the right labium majus to a point an inch above the anus; the levator ani is separated in the direction of its fibres.

REFERENCES.—[1] "Deut. med. Woch.," No. 22, 1895, and "Amer. Journ. Med. Sci.," Jan., 1896.

RECTUM (Stricture of). *Prof. E. Sonnenburg, M.D., Berlin.*

Operative Treatment of Rectal Stricture by a New Method—Rectotomia Externa.—Strictures brought about by widespread ulceration are regarded by most surgeons as syphilitic. Apart from those where

the severity is due to the extent of the ulceration, the most obstinate cases are those where annular strictures and hard knob-like prominences are found on a hard infiltrated base. Such cases are sometimes described as Elephantiasis recti.

It cannot, however, be denied that the question of etiology is by no means decided, and that other forms of ulceration, such as those due to gonorrhœa, tropical dysentery and tuberculosis, may be clinically indistinguishable. Even the *post mortem* of such cases does not give very much information as to the specific nature of the ulceration ; it shows chronic callous ulceration of the mucous membrane going on to fistulæ and strictures, along with other changes common to all chronic ulceration where there is much local irritation from discharge.

Microscopically all we can say is that a case is not carcinoma, and it may also be possible to exclude tuberculosis.

It is not therefore surprising that many should hold the conviction that these strictures, which mostly occur in women, have nothing to do with syphilis. This view finds an apparent confirmation in the failure of specific treatment. The argument is, however, fallacious ; many other severe tertiary forms of the disease are equally resistant. The difficulties are local ones, and include the nodosities which help to retain the pus, portions of necrotic tissue, and putrefaction from the retention of fæces, etc.

The statement that other manifestations of syphilis are absent is in my experience incorrect ; in the early stages the nature of the process may be determined by the observation of miliary gummatous ulcers scattered in all the layers of the bowel ; they begin, however, in the mucous membrane.

The prognosis being grave, it is not remarkable that many methods of treatment have been suggested. Those which have been found most useful are : (1,) Gradual dilatation by bougies ; (2,) Rectotomia interna ; (3,) Colotomy in impermeable stenosis ; (4,) Extirpation ; (5,) Pean's method (for stricture of the anus); (6,) To these I would add another which I have devised and which so far as I can discover, has not yet been tried elsewhere—rectotomia externa.

(1,) *Dilatation.*—The ordinary rectal bougies are made of soft gutta-percha. Esmarch prefers those made of glass. They must be numerous and vary in size up to 2 cm. in diameter. Where the treatment is prolonged the sphincter often suffers, especially if the thicker bougies be used. A better plan, therefore, is to use those made with a neck, and a curve to fit that of the sacrum. They are made of hard gutta-percha and can be left in for two or three hours without doing any damage to the sphincter. With patience and perseverance on the

part of both surgeon and patient this method is often followed by success, even in very severe forms of stricture.

(2,) *Internal Rectotomy.*—If the treatment by bougies has failed, or if the stricture be very tough and membranous, we may divide the constricted part with a probe pointed bistoury, Cooper's hernia knife, or some specially constructed instrument. The incisions must not be too deep, for the hæmorrhage is apt to be severe, and it is therefore better to make a number of small nicks. There is undoubtedly some risk of infection from the wounds. The operation must of course be followed up by the use of bougies, methods 1 and 2 being combined.

(3,) *Colotomy.*—If there is widespread ulceration, this operation, by removing those influences which interfere with healing, is a useful one. The fæces escape through the artificial opening and the ulcers find much improved chances of healing. The stenosis often improves rapidly, and in any case is more amenable to treatment. If the case do well the opening may even be closed and the fæces passed once more through their natural channel. In other cases of course the opening must be permanent.

(4,) *Excision of the Rectum.*—Many successful attempts have been made to remove the stenosed part entirely. The operation is practically the same as for cancer of the rectum, and is usually done in the lateral position, the coccyx and a portion of the sacrum being also removed. The operation is usually a difficult one, the bowel is very friable, and the inflammation has matted the surrounding parts to the bowel. It is hardly ever possible to effect the separation with the handle of the knife ; the whole operation must be done by the cautious use of the knife and scissors. The frequent complications, such as fistulous openings and widespread inflammation, increase the gravity of the prognosis, and good results can only be obtained when the sphincter has been preserved. As much as 20 cm. of the gut have been removed, but the upward extent of the operation is of course limited.

(5,) *Pean's Method.*—Pean divides the skin and the posterior wall of the rectum in the middle line, and stitches up the longitudinal wound transversely. The method can only be of value in strictures limited to the anus.

(6,) *External Rectotomy.*—This method of mine has apparently not been used by any other surgeon, at all events I have seen no references to it. Its idea is closely related to that of external urethrotomy for urethral stricture. The method consists in the incision of the stricture from without inwards along with the removal of part of the sacrum, as in the operation for cancer. It seems to be a good method for high situated strictures.

The patient is placed on the right side, the thighs fully flexed and the buttocks slightly elevated. The incision is made in the middle line, from the middle of the sacrum to the tip of the coccyx, down to the bone, the soft parts are retracted laterally, the coccyx bisected and the one half, after separation from the sacrum, is drawn with the soft parts to one side. A piece of the sacrum extending from the border to just beyond the middle line, and as high as the third or fourth sacral opening, is removed with the mallet and chisel.

The way now lies open, and the tough, thickened rectum can be incised along its whole length. The finger is then introduced into the gut in order to discover whether any stricture exists higher up, and if so, the incision, now from within outwards, is extended. There is no risk of the peritoneum, for in this region the adhesions are very dense. Hæmorrhage should be arrested by tampons, and these should be left in until the next day.

Recovery takes weeks or months, but since the sphincter is preserved the results are perfect; I have never had a persistent fistula.

I have operated now in six cases; the first seven years ago. When I last heard of the patient, one year ago, the cure was complete. In the four other cases the results are apparently as satisfactory, but the time which has elapsed since the operations (up to fifteen months) is still too short to speak definitely. One patient is dead, but not in consequence of the operation, and, nevertheless, I believe I am justified in recommending the method and in asking for it a fair trial, for it is associated with little danger and it appears to achieve its end. Just as in the similar operation on the urethra, bougies must be used steadily during the healing process and afterwards.

RESPIRATION (Artificial). *R. Shingleton Smith, M.D., B.Sc., F.R.C.P.*

The Laborde Method.—Dr. Edward Martin,[1] taking as a text the statement "that respiratory movements which had ceased from asphyxia or other cause, life not being extinct, could be restored by rhythmical traction exerted upon the tongue," presents a careful study of the subject, reporting seven instances of its use. Laboratory experiments upon animals and clinical tests seem to show beyond controversy that when but one method of artificial respiration can be adopted, as in the case of a single helper in charge of an asphyxiated patient, the Laborde method is pre-eminently the best. Indeed, any form of artificial respiration, unless the tongue is drawn well forward, is unsuccessful. When more than one helper is at hand this method should be supplemented by the *Sylvester movements*, *i.e.*, traction

during inspiratory movements of the arms, relaxation during expiratory movements. Because of its ease of application and its efficiency, the Laborde method should be taught as the first and most efficient means of resuscitating the apparently dead.

REFERENCES.—[1] "Amer. Journ. Med. Sci.," March, 1896, and "Therap. Gaz.," 1895, No. 12, p. 793.

RETINA (Detachment of the).

G. E. de Schweinitz, M.D.,
Clarence A. Veasey, M.D., } *Philadelphia.*

Dr. D. H. Coover[1] suggests that the operation of **Scleral Puncture** for *retinal detachment* be performed in a dark room, or at night, by means of the electric light. An ordinary head mirror is placed on the forehead, and a ten-candle power electric light held a little behind and to the left side of the patient's head, the patient being in a sitting posture. By reflecting the light on the eye a clear view of the detachment may be obtained through the previously dilated pupil, and the point of entrance of the knife, not only clearly seen, but the latter can be watched as it passes into the fluid, the detachment under the electric light being almost transparent. Even those standing behind the operator and looking on can clearly see the knife in position.

Mr. Eve[2] describes the following method for the treatment of detachments of the retina that have suddenly appeared. An incision is made in the sclera, a trochar and cannula is inserted, the fluid withdrawn, and a **Horsehair Drain** placed in the eye. He claims good results with the method, even after other treatment has failed to produce any improvement.

REFERENCES.—[1] "Ophthalmic Record," May, 1896; [2] "Brit. Med. Journ.," May 16, 1896.

RHEUMATISM. (See "Gout and Rheumatism," also "Malaria.")

RHINITIS. (See also "Coryza.")

P. Watson Williams, M D., Lond. (Bristol)

Gerber and Podack[1] have collected five cases of fibrinous rhinitis, in which the bacteriological examination completed by inoculation of guinea-pigs has shown the presence of virulent diphtheria bacilli. In one case, one of atrophic rhinitis, of twelve years' standing, which the authors think may have begun as a fibrinous rhinitis, the "pseudo-bacillus" alone was found. Belfonti[2] has observed a case in which the bacillus was found in extremely virulent activity on the throat of a child *seven months* after recovery from the disease, and at a time when he had communicated the disease to a sister, with a fatal result. A second examination three months later showed the bacillus still

present, but in a state of great attenuation, giving rise to only a slight local inflammation after inoculation. Felsenthal[3] made cultures from two cases of fibrinous rhinitis, and found in one diphtheria bacilli of slight virulence, but in the other case no such bacilli could be demonstrated.

From the experience of numerous observers we may conclude: (1,) That while non-diphtheritic pseudo-membranous rhinitis may occur, it is exceedingly rare compared with the true diphtheritic (*Loefflerial*) affection; (2,) That the affection generally runs a benign course, although the bacillus may be virulent, and capable of infecting other persons with diphtheria; (3,) That virulent bacilli may persist in the nasal secretions long after all clinical manifestations of the disease have disappeared—the only available means of determining the infectiousness or non-infectiousness of the individual being the culture test; (4,) That while the Klebs-Loeffler bacillus varies in its virulent properties, even to being completely innocuous, neither the duration of the nasal affection, nor the clinical symptoms manifested, can form any indication whether the specific bacilli are virulent, or have so far lost their pathogenic properties as to have become non-pathogenic, or "pseudo-diphtheritic."

Hypertrophic rhinitis, if causing a marked degree of nasal obstruction, must, in the majority of cases, be treated by removal. It is, however, necessary first to assure ourselves that we are dealing with actual hypertrophic rhinitis, and not with a simple chronic vascular dilatation of the turbinated bodies, a local condition often associated with and dependent upon a general deficiency of vascular tone, dyspepsia, a lithæmic diathesis, or other general pathological conditions. Radical destruction of such important structures as the turbinated bodies should not be too lightly undertaken, as, once destroyed, these structures can never be restored. In my experience well-marked moriform hypertrophy of the posterior portion of the inferior turbinal is a decidedly uncommon condition, though I am well aware of the enthusiastic advocacy of radical removal of these structures by some practitioners with reports of large numbers of cases operated upon. In a considerable proportion of cases of hypertrophic rhinitis, those in which the hypertrophic condition is not extreme, and which constitute the large majority of cases, I have found the **Galvano-cautery**, cautiously used, give very good results. It is essential that the cautery be applied to the posterior portion of the turbinated body where the hypertrophic condition is most pronounced.

J. E. Hett,[4] of Berlin, Ont., states that in his opinion many specialists are the cause of producing posterior hypertrophies in some cases, and

says it is done in this manner: Hypertrophic rhinitis is treated in the usual manner with the galvano-cautery. We cauterize all the hypertrophied tissue we can see, and when we have cauterized it sufficiently, as it seems to us, we expect that the case is cured. But the patient comes back and tells us that his nose is still blocked up.

Now what we have caused is this: By repeated cauterizations the turbinated tissue is thrown into folds by means of scar tissue, and we destroy the sub-mucous tissue near the posterior portion of the turbinated bone, which interferes with the circulation of the blood in the tissue below the scar. It becomes congested, and, as the blood cannot readily pass upward, that portion of membrane, if not already enlarged, must of necessity become enlarged, and gradually well-developed hypertrophies are the result. The hypertrophy is situated at the posterior angle of the inferior turbinated bone; from there it extends downward, forming a large rounded hypertrophy. If the parts are thoroughly under cocaine, and a fine probe is passed beneath the turbinated bone, and then brought inward around the borders, we perceive that it lifts the mass upward and inward, and now we are able to see it clearly, and to judge of its size. Hett finds that it can be removed with the cautery or hot snare, but that this is very tedious, and often unsatisfactory. He believes that the best and the most rational method is to take long angular scissors, pass the lower blade along the lower border of the inferior turbinated bone to the free border, and then cut off the overhanging tissue; then, removing the scissors, he takes long angular forceps and removes the tissue that has been severed. If not completely cut off, no harm is done by giving gentle traction and tearing it off. Much force should, however, not be used, or we will remove more tissue than we want. If not completely severed, it is better to introduce the scissors again and give it another cut. Hæmorrhage will follow, and it may bleed considerably, but if the following rules are adopted afterward there will be little trouble: After the operation, and the patient's nose has been thoroughly washed out, he should not allow his head to hang down, or blow his nose—that is, on the side which has been operated upon—until the following morning. He may walk about, etc., the same as after other operations in the nose attended by hæmorrhage. At night, on retiring, he should have a number of pillows under his head, and should lie on the side opposite to that which has been operated on, so as to bring that part uppermost. That he advises in all cases of nasal hæmorrhage, no matter from what cause, and it has always been effectual, as he has never been obliged to plug the cavities.

This method of removing posterior hypertrophies is, in Hett's opinion,

the most rapid and most rational of any method. It has given him such excellent results, that he now uses the cautery very little.

In conclusion, the author states that the *disadvantages* of the method are: (1,) The hæmorrhage; but if the above simple rules are followed we have very little trouble; (2,) It does not look so mild as the cautery, though in reality it is less painful, and sensitive patients will object to this treatment more than to the cautery.

The *advantages* are, according to Hett: (1,) It requires only a few treatments. In one treatment as much can be accomplished as in half a dozen to a dozen other treatments, thereby saving much time. In the majority of cases one treatment on each side is all that is necessary; (2,) It is less painful than any other method. Patients on whom both methods have been used prefer the cutting; (3,) The thoroughness with which the tissues are removed; (4,) It causes very little scar tissue, and in reality a small wound; (5,) Heals more rapidly; (6,) The tissue, when healed, will not resemble a tissue all puckered up and riddled with cicatrices, but will resemble more the normal tissue; (7,) It is the most rational method, for if we have similar enlarged tissue occurring at any of the orifices of the body or skin, we would not cauterize it, and treat it, but would simply take a pair of scissors and cut it off. In the nose the same rule holds good.

Scheppegrell[5] has found that chromic acid leaves behind a stinging pain in the nose as soon as the effect of the cocaine, previously applied, has passed away. An inconvenience common to chromic acid, trichloracetic acid, and the electric cautery, is the formation of a cicatrix. **Electrolysis** avoids both of the inconveniences noted. The bipolar method is the preferable one (*i.e.*, both electrodes in the nose). He enumerates as the advantages of the bipolar over the unipolar method: (1,) The former is more rapid in action; (2,) It is less painful; (3,) Its action is more effective on the tissues. As compared with other methods, electrolysis is preferable, because: (1,) It is conservative, and does not destroy the mucosa or its glandular elements; (2,) It is but little painful to the patient, and not at all difficult to the operator; (3,) Being so largely a submucous operation, the phenomena of reaction are very slight. The electrolysed tissues are frequently absorbed, instead of forming a cicatrix, as happens with other methods; (4,) The dangers of subsequent adhesions are practically *nil*.

The procedure is contra-indicated in very young children and nervous patients. It requires, of course, a longer *séance* than the cautery. In certain nostrils, moreover, the anatomical formation is such as to preclude the proper introduction of the needles.

Bischof,[6] in enumerating the dangers that may arise in making nasal applications, advises that where **Chromic Acid** is applied to the nose, an **Alkaline Douche** should be used after the patient has blown the nose thoroughly; neglect of this has led to severe toxic symptoms, due to swallowing of chromic acid. Adhesions between adjoining surfaces after use of caustics or galvano-cautery are to be avoided by application of ointments, and daily breaking down of adhesions. Many nervous disturbances have followed the use of the galvano-cautery: for example, headache, neuralgia, asthma, and in several cases more serious and even fatal results, especially pyæmia and thrombosis of cerebral sinuses. The danger of septic processes is still greater in operations on the nose associated with much bleeding: for example, removal of polypus or growth, correction of septal deviation, etc. In view of such cases, all instruments used for nasal operations should be sterilized, and the nasal cavities should be irrigated with antiseptic fluids after all such operations.

REFERENCES.—[1] "Deut. Archiv. f. klin. Med.," 1895, Bd. liv, p. 262, and "Amer. Journ. Med. Sci.," Feb., 1896; [2] "Riforma. med.," March 23, 1894, and "Amer. Journ. Med. Sci.," Feb., 1896; [3] "Munich. med. Woch.," Jan. 15, 1895, and Epit. "Brit. Med. Journ.," Oct. 2, 1895; [4] "New York Med. Journ.," Feb. 8, 1896; [5] "Rev. Int. de rhinol.," v, 1895, p. 215, and "Amer. Med. and Surg. Bulletin," Feb. 1, 1896; [6] Epit. "Brit. Med. Journ.," Nov. 2, 1895.

RHINITIS (Atrophic). (See "Ozæna.")

RINGWORM.

P. G. Unna, M.D., Hamburg.
Norman Walker, M.D., Edinburgh.

Ringworm was the subject which excited most interest at the International Congress, in London, last August, and an immense amount of work had been done in view of the discussion by Sabouraud, Colcott Fox, Morris, Adamson, Unna, Rosenbach, Leslie Roberts and others. The discussion was chiefly concerned with the nature and varieties of the fungus, and in most of the papers there was not much of immediate practical value. Indeed, the only speaker who really touched the practical point was Mr. Morris, who concluded that there are only two varieties which concern the clinician. These two he would for the present entitle the small-spored and the large-spored; and he pointed out that the small-spored was incomparably more refractory to treatment than the latter, in addition to being the most common, and the most contagious. He does not, however, agree with Sabouraud, and a number of other workers, that the small-spored variety is confined to the head, and that kerion is due to the large-spored variety. In this latter point he is supported

by Adamson and Colcott Fox. He mentioned incidentally his belief that many forms of 'ringworm' are really varieties of favus, and that favus is much commoner in London than has been previously supposed.

It will be a little troublesome to the student, and to the teacher, to grasp at once the fact that common ringworm is no longer due to the Trichophyton fungus, but that the correct name in future is the Microsporon Audouini. Roberts and Krösing stand out against the division into large and small-spored, maintaining that the size of the spore varies very considerably, and Mr. Morris, in his paper, mentions a case where the one form existed on the head, and the other on the body. Krösing holds that tinea circinata and sycosis may be produced by the same variety of fungus, and that it is impossible to determine the variety by the clinical aspect.

In connection with the treatment of the affection, we have a number of old friends resuscitated.

Sabouraud[1] reports a case of ringworm of the nails successfully treated by a solution, 1 to 1,000 of **Iodine** in **Iodide of Potash Solution**. The wet dressings were covered by gutta-percha.

Du Castle[2] recommends :—

℞				
	Chrysarobin	10 to 25	Ichthyol	5
	Salicylic Acid	5	Simple Ointment	50
	Ung. Styracis	5		

Another prescription is[3] :—

Hydrarg. Perchlor.	gr. 20	Tincture of Iodine	℥ss

Paint on the clear fluid night and morning.

Common Salt has been a good deal spoken of, and apparently may be used with benefit in some cases.[4]

Formalin, either diluted or strong, is said by some to be very successful in its results. The peculiarly pungent odour is a drawback, and N. Walker's experience of it is that it is not any more successful than less unpleasant remedies.

The photo (*Plate XXIV*) represents the condition known as kerion. The large rounded patch was swollen, bright red, and fluctuating. Most of the hairs had fallen out, and those which remained could be lifted out without any effort. This has been called nature's method of curing these cases, and it does remove the disease from the affected part. It must be left to nature. Incision, tempting as it seems, is of no value in hastening the progress. A **Starch Poultice**, or some bland ointment, is all that is required.

This case is interesting in connection with the fungus found, which

PLATE XXIV.

was of the so-called "small-spored" variety, while the patient's brother had ringworm without any kerion.

REFERENCES —[1] "Annales de dermatologie et de syphil.," Jan., 1896; [2] "Union méd."; [3] "Practitioner," Nov., 1895; [4] "Brit. Med. Journ.," Nov. 23, 1895.

ROSACEA. *P. G. Unna, M.D., Hamburg.*
Norman Walker, M.D., Edinburgh.

Heuss recommends the application of very **Hot Water** in the day time, and the use at night of a 10 per cent. **Sulphur Ointment**, till dermatitis is produced. If there be any pustulation **β-Naphthol**, 2 to 5 per cent. should be used.

Fournier[1] strongly recommends **Scarification**. It is useful in all forms, but especially in the teleangeiectatic form. It is useful in the erythematous stage in women so long as this is intermittent, but it is not enough for the hypertrophic elephantiasic form. When scarification of the vessels is desired a simple needle suffices. The skin ought to be previously cleansed with ether, benzol, or better still, with acetone locally. Anæsthesia is not desirable on account of the anæmia of the vessels which is produced.

(A very considerable number of cases are secondary to seborrhœa of the scalp, and more benefit will be got from treating that affection than by any treatment of the face itself alone.)

REFERENCE.—[1] "Journ. des. maladies cutanées."

SCABIES. *P. G. Unna, M.D., Hamburg.*
Norman Walker, M.D., Edinburgh.

Julien,[1] at the French Dermatological Society, recommended **Balsam of Peru**. The patient is rubbed in the evening for fifteen or twenty minutes; the balsam vapour is sufficient to kill the parasite. He sleeps in a night-shirt impregnated with balsam of Peru, and next morning is soaped all over, and has a bath. The treatment is particularly useful in weakly persons, and in those with secondary eczematous lesions.

Feulard[2] recommends it in combination with **Naphthol**:—

Balsam of Peru	ʒv	Lard	ʒvj
β-Naphthol	ʒj		

Julien and Descouleur[3] have experimented with this treatment, and they find that the acarus exposed on a watch-glass to sulphur fumes might remain alive for sixteen hours. Six acari, placed in contact with Balsam of Peru, died in half-an-hour. The vapour of the oil also

destroys the eggs. If these experiments are confirmed, the results will be very gratifying.

REFERENCES.—[1] "Semaine méd.," April 15; [2] "Rev. Int. de méd. et de chir. prat.," Dec., 1894; [3] "Lancet," April 18, 1896.

SCARLET FEVER. *F. de Havilland Hall, M.D., F.R.C.P.*

The opinion is gaining ground that the chief means of propagating scarlet fever are the secretions from the throat, nose, and ears.[1] Though it would be premature and rash for the medical attendant to allow of any relaxation in the present system of isolation until desquamation is complete, still the knowledge of the extremely infective nature of the discharges from the mucous membrane of throat and adjacent parts should lead to their careful disinfection. Cleansing of the nares and naso-pharynx may prevent extension of suppuration to the Eustachian tube with consequent otitis media and all its dangers. The best plan is to spray out the nostrils with a simple alkaline solution, and afterward with an atomiser to spray the affected surfaces with the following solution :—

℞	Menthol	gr. xx	Paraffin fluid ad	℥j
	Eucalyptol	♏x		

These applications should be made every three or four hours if the discharge from the nose is abundant. It cannot be too strongly stated that in the hyperpyrexia of scarlet fever drugs are worse than useless; the only safe antipyretic is **Cold Water.** In malignant scarlet fever with high temperature, the cold bath must be freely used, as unless the temperature is brought down, the patient may die in a few hours. In this disease antipyrin, antifebrin and their allies are dangerous.

Mr. Bellingham and Dr. Mary Sturge[2] conclude an able article on the suppurative joint lesions of scarlet fever by the following remarks on treatment :—

"In addition to early and prompt surgical treatment consisting of free incision and drainage, we would lay stress on the advantage to be gained by prolonged immersion of the joint in a warm **Boracic Bath.** During any intervals between the baths hot boracic fomentations are preferable to dry dressings. Nasal feeding is in some cases essential in order to combat the exhaustion of the patient, and may often be used as an easy way of giving *extra* food in cases where the patient is exhausted with the effort of taking nourishment by the mouth."

On the ground of the presence of a streptococcus in the glands, kidneys, ear discharge, valvular vegetations, etc., Dr. Marmorek[3]

injected **Anti-streptococcus Serum** in ninety-six cases of scarlet fever at the Trousseau Hospital. Of these, five died—four from diphtheria, and one from pneumonia. The most marked effect of the serum was on the swollen glands, which subsided so rapidly that there was no suppuration in a single case. In the event of albuminuria, one or two injections caused its disappearance. Not only did the serum seem to prevent grave complications, but it also caused the rapid disappearance of false membrane from the throat, and the subsidence of delirium. The general state rapidly became better, the pulse slower and stronger. The only bad effects observed were transient erythemas.

REFERENCES.—[1]"Amer. Med. and Surg. Bulletin," Feb. 1, 1896; [2]"Lancet," Nov. 16, 1895; [3]"Brit. Med. Journ.," Mar. 28, 1896.

SCIATICA. *Græme M. Hammond, M.D., New York.*

Dr. Samuel Hyde,[1] in a recent article on this subject, analyzes two hundred cases occurring in recent years. The most common cause of sciatica has been hitherto generally ascribed to exposure to cold, but it is remarkable, as the author shows, that only a small proportion—13 per cent.—could be traced to this cause. On the contrary, in the great majority of cases, it was clearly shown that some constitutional condition, such as gout, rheumatism, or general debility, was responsible for the attack. Pressure upon the sciatic nerve, from constipation and consequent fæcal impaction, has long been regarded as a frequent cause of sciatica. Hyde finds little evidence to substantiate this theory, and concludes that it is a very infrequent cause indeed. In regard to treatment, he considers change of air important, and advocates warm douches, dry and wet massage, generous diet, gentle open-air exercise, and drug tonics. The duration of the treatment varied from three days to twelve weeks.

Dr. A. Stodart-Walker[2] speaks highly of the benefit derived from hypodermic injections of **Strychnia.** He reports three cases relieved by this means, in which the salicylates, salol, iodide of potash and salicylic acid had been given in vain. The strychnia was injected three times a day, in an initial dose of ½ a milligramme, and gradually carried up to 2 milligrammes at an injection.

Krauss[3] speaks highly of the value of **Nitro-Glycerine** in sciatica. He reports seven cases of this disease cured by this remedy. He employed a 1 per cent. solution, and gave 1 minim three times a day, increasing the dose to 3 or 4 minims if necessary. The only discomforts arising from the use of the drug were congestive headaches and flushing of the face sometimes following the first dose, while at other times they did not supervene until the maximum doses

were administered. To counteract these effects, the bromides were used without in the least diminishing the curative action of the nitroglycerine.

Compression of the sciatic nerve has been practised by M. Negro[4] in one hundred and thirteen rebellious cases with great success. The patient lies upon his abdomen, and the operator presses both thumbs, with the greatest possible force, over the sciatic nerve at the point where it emerges from the pelvis through the great sciatic notch. Slight lateral movements are made at the same time. The pressure is to be continued for fifteen or twenty seconds, and should be followed by an interval of twenty minutes' rest, when the procedure should be repeated. After the second application, which is much less painful than the first, the patient is able to walk, and for several hours or even a day, he may be free from pain. In order to obtain complete recovery, this plan of treatment should be practised about six times a day every two days, until the definitive suppression of the neuralgia is obtained.

REFERENCES.—[1]"Lancet," May 9, 1896; [2]"Indian Lancet," Jan. 16, 1896; [3]"New York Med. Journ.," Feb. 29, 1896; [4]Ibid.

SCOLIOSIS. *Otto G. T. Kiliani, M.D., New York.*

Since the etiology of scoliosis and the static laws governing the same have been studied more closely, both the prophylaxis and the treatment of lateral curvature of the spine have progressed considerably.

In well-developed habitual scoliosis of the usual kind, with dorsal convexity to the right and lumbar convexity to the left, we find in the so-called second stage the following symptoms: (1,) The vertebral column is shortened; (2,) The whole spine is displaced to the right; (3,) Besides the angular deformity of the ribs, the spine is twisted, so to speak, around its longitudinal axis, so that the right side of the thorax stands considerably further back than the left.

If our therapeutic efforts should enable us to correct these three cardinal points, or, still better, to over-correct the position by transforming the scoliotic curvature into the opposite curve, when the static laws would exert their influence upon the vertebræ in the reverse sense, and if, finally, we could keep the vertebral column in this corrected or over-corrected position for any length of time, we would be able to cure a scoliosis just as well as the severest cases of club-foot, as Hoffa sets forth so ably in his "Lehrbuch der orthopädischen Chirurgie." But as yet we are far from having achieved anything of the kind.

If my impression is correct, a good many of the physicians treating

Fig. A.—Artificial curvature of normal spine, caused by modified handle-bar

Fig. B.—D. F. Scoliosis. Aged thirteen.

Fig. C.—D. F. seated on bicycle with modified handle-bar. Spine practically

scoliosis have given up to a great extent the apparatus in the form of plaster of Paris corsets and braces, for remedying this condition.

My personal opinion is, that all modern treatment for scoliosis should culminate in the endeavour to correct the curvature as much as possible, and then, instead of trying simply to keep it in this position, to exercise the muscles in this corrected position, so that they will be able to hold the spine in it, if the altered anatomical conditions will permit.

Before describing my new device to achieve this purpose, it seems hardly necessary to state that I consider it only one link in the long chain of therapeutic efforts, and nothing would be more wrong than to rely solely upon the one in question.

Bicycle exercise constitutes such a perfect combination of active and passive motion, by means of an exactly constructed machine, that it suggested itself to me to make use of it in the treatment of scoliosis. The oft-repeated accusation that the bicycle tends to develop forward curvature of the spine (kyphosis) was, of course, of no weight, and, if so, it would rather have induced me to make use of this quality.

In order to adapt the bicycle for the treatment of scoliosis, I had made a handle-bar, either half of which can be lowered to any degree desired, and held fast in this position.

The handle-bar (as shown in *Fig.* 49) is sawed apart in the middle, and the two parts are adjusted by means of a screw and thread, fitting one into the other (the two necessary pieces having been soldered into the tubes). The circumference of the two pieces is grooved and held in place by a wedge with corresponding teeth, the latter being tightened by a screw with nut, fastening the jaws of the head, pointing toward the rider. The thread will allow the lowering of either side of the handle-bar to any degree desired, while the two halves of the handle-bar will still be held firmly together. The wedge with its corresponding teeth will hold all the parts absolutely firm when pressed in against the handle-bar by the tightening screw and nut. Any skilled mechanic will be able to alter any handle-bar in the desired way.

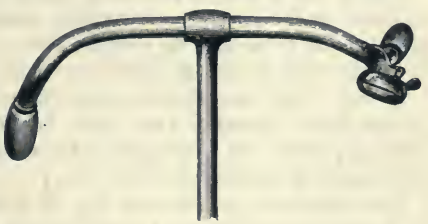

Fig. 49.

As a test of the effect of this handle-bar, I placed a sculptor's professional model, whom we may consider of perfect figure (even lacking the otherwise normal slight scoliosis brought about by the use of the right arm in manual work), upon such a bicycle held fast in a home-training machine.

In our pictures the right handle-bar is lowered to some extent, as is clearly shown by the position of the two hands. The line of the spinous processes is painted on the skin with a dermatographic blue pencil.

It is immediately apparent that the woman (*Fig. A*, *Plate XXV*), shows a left convex dorsal and a right convex lumbar scoliosis of noticeable degree. Any one who will repeat the experiment can convince himself of the conditions to be named: first, the line of processus spinosi shows clearly the bending or lateral curvature of the spine. Secondly, the thorax is decidedly twisted, so to speak, around its longitudinal axis in an ascending spiral from left to right; the right shoulder is lowered, the median edge of the left scapula stands out; the curve of the ribs of the right side is flattened; in short, we have the position we try to produce in a case of common habitual scoliosis (with dorsal convexity to the right).

If it is possible to influence the normal body in the manner described by the use of a handle-bar lowered on one side, it will be interesting to see how a case of scoliosis will be altered.

Fig. B shows a little patient of mine, thirteen years of age, with a scoliosis which needs no comment, seated on an ordinary ladies' bicycle, with arms hanging straight down. The right dorsal curvature is just as plain as the left lumbar curvature.

In *Fig. C*, the same patient, using the modified handle-bar, presents a remarkable change. Her spine is almost straight, the angular deformity of the ribs is straightened out considerably, and the position is as nearly as possible the ideal one.

For comparison, we show in *Fig. D*, *Plate XXVI*, the same patient on a bicycle with the usual handle-bar, in the same position, namely, the right pedal up.

We can influence the position of the patient still further by adding the inclined seat to the modified handle-bar. Any of the saddles in the market with separate lateral sections that can be padded higher on one side, answer the purpose well. This of course would answer only for training at home, as balancing would be seriously impaired by the inclined seat. The lowered handle-bar alone does not interfere with it at all, as I know by personal experience in riding on such a bicycle myself for the sake of trial.

Fig. D.—D. F. seated on an ordinary bicycle.

Fig. E.—D. F., Combination of inclined seat with modified handle-bars. Scoliosis over-corrected.

In *Fig. E* the scoliosis is even over-corrected by this means, a left dorsal curvature appearing plainly instead of the previous right dorsal curvature, a desideratum, which we try to achieve in all our treatment of curvature of the spine.

It seems evident that muscular action in this corrected or over-corrected position, achieved by such simple means, ought to be beneficial. For any one conversant with the treatment of scoliosis it is needless to say that I cannot speak yet of any definite results produced by this treatment, although a number of patients are using my adapted bicycle. I would not venture to utter, until several years have elapsed, any definite judgment on its possible value, but rely on the apparent rationality of the idea, and hope that other physicians may give it a trial.

Conceded that the ideas set forth in this paper are right, we only have to mention briefly the advantages of the treatment. First, a good many of the patients to be treated are in possession of a bicycle. Even for those who do not own one, the expense is relatively slight in comparison with that of other orthopædic apparatuses. Secondly, it affords a physical exercise to which the patients will take kindly, and which they will therefore carry out faithfully. This is a decided point of advantage, as the execution of gymnastic exercises always demands an unusual amount of patience and perseverance on the part of both patient and physician.

SEBORRHŒA. *P. G. Unna, M.D., Hamburg.*
Norman Walker, M.D., Edinburgh.

In the "Louisville Medical Monthly" a solution of **Sulphur**, one ounce to a quart of water, is recommended. This liquid is applied to the head every morning. (See also under "Skin, disorders of.")

SEPTICÆMIA (Treatment of). *Priestley Leech, M.D., F.R.C.S.*

Messrs. Balance and Abbott[1] publish a very interesting case of acute hæmorrhagic septicæmia successfully treated by **Anti-Streptococcus Serum.** The septicæmia was due to a *post-mortem* wound in a case of suppurative peritonitis. In seventeen hours the temperature was 103°F. The condition became worse, temperature on the third day being 104·7°, pulse 150, soft, running, and irregular.

An erythematous rash which appeared on the second day, became more brilliant and hæmorrhagic in places. There was swelling of the thumb, which was the point of inoculation, but an incision gave rise to no pus. There was drowsiness, slight albuminuria, and the mind was clouded.

At midnight on the third day 3·5 c.cm. of antistreptococcus serum

(Burroughs and Welcome) was injected and repeated every four hours. Six hours after the first injection certain indications of improvement were manifest; the mind was clear, the headache had disappeared, the respiration was regular and less rapid; the pulse was slower, and the tongue was moist along the edges. On the fifth day the dose of antitoxin was doubled, 7 cm. being injected every four hours, and after this the patient gradually convalesced.

The injections were given into the loin and abdominal wall. Notwithstanding the large number of injections, twenty-eight in all, no local reaction occurred at all except a fleeting urticaria limited to the site of injection. Every care was taken to asepticise the syringe used, to cleanse the skin at the site of injection, and to maintain the sterility of the serum by keeping it in ice. The recovery of this case suggested to the authors that the serum might be useful in many other serious surgical conditions, *e.g.*, fracture of the skull with risk of suppurative meningitis, acute necrosis, acute septicæmia, or pyæmia from any cause, rapidly spreading gangrene or cellulitis, erysipelas, general suppurative peritonitis, and septic complications of middle ear disease.

With regard to the dose, they would be inclined to commence by injecting a large dose, say 20 cm., and then give a smaller dose, say 7 cm., every four hours. A note is appended by Mr. Bokenham describing the method of preparation, and a reference to several publications on the subject is given.

Another case of septicæmia, where the infection was due to a fatal case of puerperal septicæmia, is reported.[2] Signs of pneumonia were well marked in the right lung, and the patient was in a very serious condition; 20 cm. of Burroughs, Wellcome & Co.'s anti-streptococcus serum were injected, and then an injection of 10 c.m. was given every four hours. The serum was continued for eighteen days, with intervals of discontinuance of ten days. The diagnosis was confirmed bacteriologically.

In this case no local manifestations of the place of entry of the poison were apparent. During two intervals of five days each without serum the patient gradually relapsed.

Some local erythema was noticed when the last half of the 20 cm. bottles were used in the evening; to avoid this, the authors (Messrs. Colman and Wakeling) suggest that the serum be bottled in 10 cm. bottles with indiarubber corks.

Dr. Bulloch[3] gives details of experiments to render large animals immune against *streptococcus pyogenes* in order to obtain an anti-streptococcus serum. He draws attention to one very important

point, viz., that the serum is only antagonistic to the streptococcus, and attempts to cure staphylo-mycoses with the anti-streptococcus serum will be failures. A bacteriological examination is therefore a necessary preliminary. (See also "Serum Therapeutics," p. 7.)

REFERENCES—[1] "Brit. Med. Journ.," vol. ii., 1896, p. 2; [2] Ibid., p. 647; [3] "Lancet," vol. i., 1896, p. 1216.

SINUSES (Treatment of). *Priestley Leech, M.D., F.R.C.S.*

Dr. Veeder[1] records a case of extensive suppurating sinuses where, after the continued use of solutions of carbolic acid, perchloride of mercury, boric acid, permanganate of potash, peroxide of hydrogen, salicylic acid and salicylate of soda, no improvement took place, but a solution of **Tannin** produced rapid and permanent improvement. The sinuses were syringed out with it, and the pus was coagulated into a cheesy mass and was squeezed out in the form of long worms.

REFERENCE.—[1] "Med. Record," Mar. 28, 1896.

SKIN (Disorders of). *P. G. Unna, M.D., Hamburg.*

(See also Special Articles.) *Norman Walker, M.D., Edinburgh.*

Acetanilide is recommended as an application to granulations, in an ointment 1 drachm to the ounce.

Veiel has seen good results from the action of **Airol**, which however is not so powerful a disinfectant as **Iodoform.**

Asiatic Pills are often referred to. The following is the Berlin officinal formula:—

Acidi Arseniosi	·06	Pulv. Glycyrrhizæ	3
Pulv. Piperis Nigri	1·5	Mucil. Gummi Arabici	q.s.

M. ft. pil., 60.

An ointment for decubitus:—

Zinc Sulphate	2·5	Tincture of Myrrh	1
Acetate of Lead	5	Vaselin ad	50

Respecting **Ichthyol**, Dr. Eberson[1] comes to the following conclusions: Ichthyol is one of the few specific remedies. It is a specific in erysipelas. It is a mighty weapon in erythema, eczema rosacea, intertrigo, blennorrhœa and its complications, chronic nephritis, and in inflammatory affections of the uterus.

Iodoformin contains 75 per cent. of iodoform, and has no smell.

Myronin is a new ointment basis introduced by Nemann.[2] It is yellowish, aromatic, about the consistence of butter, and can be mixed with water. Chrysarobin mixed with it becomes oxidised. Otherwise it is a fairly good base.

Hartzell[3] recommends **Resorcin** in a number of cases. In aqueous

solution he adds a ½ per cent. of salt. In erythematous eczema apply resorcin, 10 to 15 grains; glycerine, 10 minims; liquor cal., 1 ounce. In moist oozing eczemas, oxide of zinc, or some such powder, should be added. When the skin is dry and scaly it should be used in the form of a paste, 15 grains to the ounce. In psoriasis it has to be used much stronger, 30 to 40 grains to the ounce, but it must be used with caution. He thinks it very useful in seborrhœa of the scalp; resorcin, 20 grains; alcohol, 2 drachms; vaseline, 6 drachms. In acne it is inferior to sulphur, but Hartzell lauds its value in superficial epithelioma. He also finds it useful in favus—a drachm to the ounce. It has the great advantage of being colourless and cleanly.

Cantrell[4] gives his experiences of **Salicylic Acid** in various skin diseases. In eczema he found it most useful in the scaly lesions, and very successful in psoriasis. In ringworm and favus only the stronger ointments were of any use. Hyperidrosis and dysidrosis were both benefited, and acne and seborrhœa markedly improved. In fact there are few conditions in which he has not found this drug useful.

Baumann[5] concludes that in **Thyroid Glands** there is only one active principle, namely, thyro-iodine. The amount of this, and of iodine, varies greatly in different localities. In Freiburg, where gôitre is common, there was distinctly less iodine than in Hamburg and in Berlin. The glands of the sheep are most active.

Allan Jamieson recommends as a non-irritating **Base for Ophthalmic Ointment**: Lanolin, 3 drachms; oil of almonds and distilled water, of each, a drachm.

Xeroform is a new antiseptic powder, non-irritating, non-poisonous, and non-odorous. It promotes epithelial growth and diminishes pain.

REFERENCES.—[1] "Wiener med. Press," 1895, No. 44; [2] "Deut. med. Woch.," 1895, No. 36; [3] "Therap. Gaz.," June 15, 1896; [4] Ibid., April 15, 1896; [5] "Munch. med. Woch."

SKIN (Drug Eruptions of). *P. G. Unna, M.D., Hamburg.*
Norman Walker, M.D., Edinburgh.

Arsenic.—Dr. Caiger[1] reports the case of a lady who after taking 5 minims of arsenic three times a day, for a week, was affected with an eruption on the hands. There was general œdema, and numerous small, deep-seated vesicles. The eruption was considered to be pompholyx, and treated as such. Arsenic was once more prescribed, and was again followed in four days by a similar attack. Enquiry elicited that she had previously had an attack also following the use of arsenic.

It is of course well known that herpes zoster may occur under similar circumstances.

Carbolic Acid.—Leusser[2] has observed three cases of carbolic gangrene following the application of bandaging with a 2 per cent. solution, and warns against the uncontrolled use of carbolic lotions.

Röntgen Rays.—Dr. L. G. Stevens[3] draws attention to the fact that workers with these rays are liable to various skin affections. One operator who had been working very diligently, had an erythema attacking both eyelids, nose, and upper lip. The hands and wrists were also affected. Others who were not using the platino-cyanides, as he was doing, have also suffered, and it seems probable that the eruption is of the nature of sunburn, and that the X rays are a normal constituent of sunlight, as has been asserted.

Marcuse[4] relates the case of a young man on whom experiments with the rays were made once or twice a day for four weeks. There was redness on the face, and a sharply defined patch just above the ear, where the hair was very thin. On the back there was a space as large as a plate, over which the epidermis was completely separated. There were hæmorrhages and exudation. A similar spot was present on the front of the chest, but the lesions were not so severe.

Drury[5] describes the case of a patient who was exposed to the rays altogether for two and a half hours in the search for a possible renal calculus. A reddish patch appeared on the abdomen exactly opposite the platinum plate of the tube, which became vesicular, discharged freely, and when cleaned had a smooth, glazed, pink surface with no granulations. It was, however, most difficult to heal, and at the date of writing, sixteen weeks after the exposure, it was still unhealed.

Quinine.—Johnston[6] reports a case of bullous eruption brought on by quinine. The patient had only taken 30 drops of compound tincture of cinchona. The whole surface of the body was covered with enormous bullæ.

Salicylate of Soda.—Sheppard of Montreal describes a case of purpuric eruption apparently caused by salicylate of soda. He says, as the patient had the symptoms of acute rheumatism, the question is whether there might not have been some relation between that and the eruption.

Sulphonal.—Wolters[7] reports two cases of an eruption resembling scarlet fever, which followed the administration of this drug. In one case the phenomenon was thrice repeated.

REFERENCES.—[1] "Brit. Med. Journ.," April 18, 1896; [2] "Munch. med. Woch.," 1896, No. 15; [3] "Brit. Med. Journ.," April 18, 1896; [4] "Deut. med. Woch.," July 23, 1896; [5] "Brit. Med. Journ.," Nov., 1896; [6] "Journ. Cut. Dis.," July, 1896; [7] "Ther. Monat.," 1889, No. 12.

SKIN GRAFTING. *Priestley Leech, M.D., F.R.C.S.*

This very useful method of shortening the cicatrization of large granulating surfaces is very extensively used, but difficulty is sometimes experienced in obtaining the skin grafts.

Miles[1] has tried skin grafts from the lower animals. The animal is first killed with chloroform, the skin of the abdomen and flanks is then shaved, and well washed with 1 in 40 carbolic solution. The skin is then dissected off from the subcutaneous fat, and floated on to warm boracic acid solution ; it is then placed on the ulcer, a moist pad of gauze being placed on the skin, and oiled silk over this. The whole is left undisturbed for forty-eight hours. No wiping is allowed, *débris* being removed by a feeble stream of lotion. He has tried this method in ten cases.

Le Coq[2] has tried skin grafts from the frog, in the treatment of wounds and ulcers. He says that when a patient is diabetic, albuminuric or alcoholic, or when he or his friends decline to furnish skin grafts, animal grafts should be used. The grafts from the frog's skin give the best results ; the wound should be aseptic, and suppuration should have ceased. The frog must have previously been disinfected, and the grafts should be placed in warm boracic acid solution as removed.

Kibbler[3] has had excellent results with thin slices of callus, or indurated epithelial tissue, taken from the palmar surface of the hands, or plantar surface of the feet. No pain or discomfort is caused to the donor.

Hogden[4] has used scrapings of epithelium, and shavings of corns.

Zera J. Lusk[5] reports a case, in which six hundred square inches of raw granulating surface was healed, in less than six weeks, by grafts furnished by the patient. The patient had been scalded, from falling into a vat of boiling brine. He used some dried exfoliated epidermis, the results of vesication from the scald. He took a square inch of this, softened it in warm boracic acid solution, and cut it into twelve pieces, which he applied as grafts, to the raw granulating surface. Seven out of the twelve grafts took. In this way, he covered the entire granulating surface. The idea then occurred to him, that vesication by cantharides, might furnish epithelium for grafts, and he tried this method in a case of varicose ulcer. A blister was produced by emplastrum cantharides. The epithelium was detached at the edges of the blister, washed in boracic acid solution, and then the superfluous moisture was absorbed by sterilized cotton wool. The epithelium was then suspended in a four ounce bottle, stoppered with sterilized cotton wool, and kept at a temperature between 55° and 70° F. It was thoroughly dry in three

days, when it was divided into grafts, which were successfully used. He thinks these dried epithelium grafts might be kept indefinitely at a temperature between 40° and 90° F., and before using, they should be softened and sterilized, in warm boracic acid solution.

Dr. Leonard Freeman[6] says that eighteen months ago he employed the epidermis from a cantharides blister, in grafting an old crural ulcer. He employed the epidermis fresh from the blister, and did not prepare the ulcer by scraping, etc., but simply sterilised it, by the application of 1 in 3000 bichloride solution for several days.

Mangoldt[7] recommends the following method : Granulating surfaces are to be freshened, other wounds are simply to be dried. The portion of the body, from which the grafts are to be taken, is first shaved and disinfected. The skin is then made tense, and with the razor held vertically to the skin, scrape carefully down to the papillary layer. The scrapings, consisting of blood and epithelium thus removed, are transferred to the wound, and spread over its surface. A protective dressing is applied, and in three weeks' time, a new layer of epithelium usually forms. The scar cannot be distinguished from that obtained by Thiersch grafting.

REFERENCES.—[1] "Edin. Hosp. Reports," iii., 1895 ; [2] "Thèse de Paris." quoted in "Brit. Med. Journ.," Epitom. March 21, 1896 ; [3] "Railway Surgeon," vol. i., 1894, p. 126 ; [4] "International Cyclop. of Surg.," vol. ii., p. 288 ; [5] "Med. Record.," Dec. 7, 1895 ; [6] "Ibid," Jan. 25, 1896 ; [7] "Deut. med. Woch.," p. 798, 1895.

SLOUGHS. *Priestley Leech, M.D., F.R.C.S.*

Anderson [1] uses **Nitric Acid** in bad cases of sloughing, and believes he has saved several limbs from amputation by this method.

REFERENCE.—[1] "Med. Record," Nov. 23, 1895.

SMALL-POX. *F. de Havilland Hall, M.D., F.R.C.P.*

The great attention that has been paid to the prevalence of small-pox at Gloucester during the present year, and the recent publication of the report of the Royal Commission on vaccination, lend special interest to Dr. Moncton Copeman's[1] work on the pathology of vaccinia and variola. His remarks on the oneness of vaccinia with small-pox deserve to be quoted. In speaking of the variolation of the calf, he says :—

"As the result of all the work which has been done in this direction, there can, I think, at the present time, be no reasonable doubt as to the possibility of inoculating the calf with variolous matter with the result of producing thereby after one or more removes a malady which is certainly no longer small-pox as ordinarily under-

stood, seeing that it has now completely lost, when transferred to the human being, its original property of infectiousness. Although this is so, it is nevertheless capable of affording protection, just as vaccinia does, against subsequent vaccination or variolation."

The outcome of Dr. Copeman's work on the micropathology and bacteriology of vaccine lymph, is an important practical point which will be best described in his own language :—

"It is a matter of common knowledge that vaccine lymph, whether stored in the liquid state or freshly obtained from a normal vesicle, usually is found when examined bacterioscopically to contain micro-organisms of various kinds, which have been shown by Crookshank, myself, and by other observers to be for the most part mere saprophytes. To these, therefore, I have applied the term "extraneous." The practically universal occurrence of these saprophytic organisms in vaccine lymph, along with chance of superaddition during or after vaccination, of pathogenic organisms by agency of careless people, whether vaccinators or persons having charge of infants, have been advanced as reasons for doing away with the practice of vaccination on the grounds of the possible harmfulness of the extraneous organisms liable to be introduced into the system at the time or in the course of vaccination. This argument, however, so far as the microbes usually intimately associated with lymph are concerned, loses whatever weight originally attached to it, since I have been enabled to show that by thoroughly incorporating a certain amount of chemically pure glycerine with the lymph, and afterwards storing the mixture for a time prior to use, all the ordinary saprophytes found associated with lymph are completely destroyed, as is shown by the fact that no growth arises in any of the ordinary culture media inoculated with such glycerinated lymph. This statement applies equally to the streptococcus of erysipelas, which has on occasion got admission to vaccine lymph. With reference to possible transmissions of syphilis and tuberculosis by the calf lymph, I need say nothing, seeing that it is universally admitted that the first of these two diseases is not transmissible to the calf, and that the bacillus of tuberculosis has never been discovered in vaccine lymph, bovine or human.

In glycerinated lymph, therefore, we have a preparation which, while even more active as vaccine than the original lymph, can, to the best of my belief, be produced absolutely free from the "extraneous" organisms which at one time or another have been isolated from fresh or stored lymph, with the possible solitary exception of *bacillus subtilis*, which, however, possesses no pathogenic properties. This statement, if it rested on my own authority alone,

PLATE XXVII.

might no doubt be received with hesitation; but, since I first published in the "Transactions of the Congress of Hygiene" in 1891 the experiments on which it is based, ample corroboration has been afforded by the fact that other observers, including Chambon, Ménard, and Straus in France, Leoni in Italy, and Klein in England, have arrived at similar results."

That "there is no new thing under the sun," is once again proved by the recent introduction of the **Red Light** treatment of small-pox. Writing in the fourteenth century John of Gaddesden gives the following prescription for the cure of small-pox: "After this (the appearance of the eruption), cause the whole body of your patient to be wrapped in red scarlet cloth, or in any other red cloth, and command everything about the bed to be made red. This is an excellent cure. It was in this manner I treated the son of the noble king of England when he had the small-pox, and I cured him without leaving any marks."

Dr. Finsen,[2] without having any knowledge of the mediæval treatment, drew attention to the favourable results arrived at by the exclusion of light in cases of small-pox, but proposed at the same time the use of red light, instead of complete darkness—that is to say, the exclusion of the chemically active rays of light. The results of this plan of treatment have so far been most successful. When the patients come under treatment early enough—before the fourth or fifth day of the disease—suppuration of the vesicles, even in unvaccinated persons and in cases of confluent small-pox, will be avoided—one exception out of about seventy. As a rule, the secondary fever does not appear, but even when it does the temperature is lower and the fever of shorter duration than is usually the case.

Plate XXVII shows the condition of the face of C. B., aged forty-eight, on the eighth day of the disease. She was treated in the Copenhagen Small-pox Hospital, and was kept in red light from the third to the twelfth day of the disease. She was discharged twenty-four days after the day on which the photograph was taken, and then did not present any pitting whatever. The temperature chart, which is also reproduced (*Fig.* 50), shows that there was not any secondary fever whatever.

Dr. Finsen enjoins the following method of carrying out the treatment:—

(1,) The exclusion of the chemical rays must be absolute; even a brief exposure to daylight may produce suppuration and its sequelæ. In other words, the skin during small-pox is as susceptible to daylight as a photographic plate, and must be kept from the chemical rays

in the same way and almost as carefully. If, therefore, red window glass is employed, it is necessary for it to be of a deep red colour, and if curtains are used, they must be very thick or in several layer . When the patient takes his meals, or during the physician's rounds, artificial light—for instance, faint candle light—may be used without any danger. As even a brief exposure to daylight can produce suppuration, and as this treatment is somewhat burdensome for the

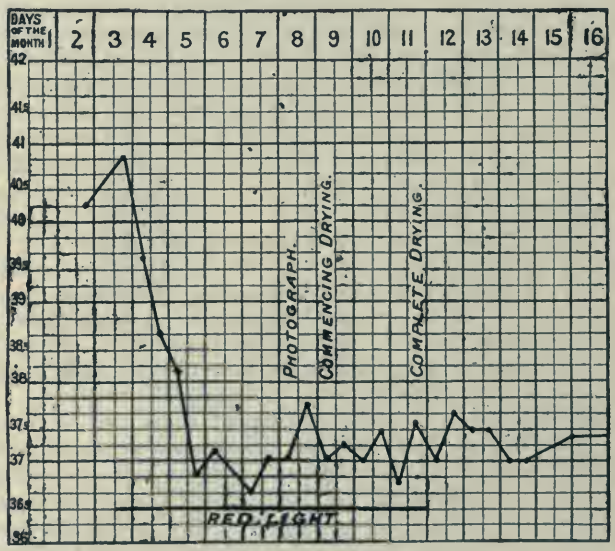

Fig. 50.

nurses, so that they are often tempted to draw back the curtains, it is necessary when they cannot be depended upon to take care that the treatment is carried out correctly, for instance by nailing the curtains.

(2,) This method does not prevent but allows the employment of any other treatment which may be considered necessary.

(3,) The treatment should be commenced as early as possible; the nearer the commencement of the suppuration the smaller the chance of success.

(4,) The patient must remain in the red light until the vesicles have dried up.

REFERENCES.—[1] "Brit. Med. Journ," Jan. 4, 1896; [2] Ibid., Dec. 7, 1895.

SNAKE-BITE. *George Lane Mullins, M.A., M.D., Sydney, N.S.W.*

Physiological Action.—C. J. Martin[1] has been investigating the physiological action of the venom of the black-snake of Australia *(Pseudechis).* It affects principally the blood, the heart, and the respiratory centre in the medulla. Its method of destroying life essentially depends upon the concentration with which the venom reaches the circulation. When this concentration attains a certain limit death may be almost instantaneous, from coagulation of blood in the vessels terminating the circulation. This happens when small animals are bitten, or when the poison is introduced in adequate amount directly into the circulation. When the concentration falls short of that necessary to raise the coagulability of the blood to such an extent as to occasion thrombosis, the blood shortly afterwards loses its capacity to clot when shed. In this condition any further injection of venom is unable to produce thrombosis.

The action of the poison upon the heart and respiratory centre is usually simultaneous. With higher concentration of venom the heart is the more rapidly affected, but the continuous operation of the poison in small concentration more quickly affects the respiratory centre in the medulla; so that, by varying the rapidity with which the poison reaches the circulation, the death of an animal may be compassed in any one of three ways: by clotting the blood in the vessels, cardiac failure, or respiratory paralysis. Further, if the victim escapes the three possibilities of a fatal issue above mentioned, it may succumb to the effects of the pathological changes in the lungs and kidneys. This last risk is, however, not a large one, and if the animal survive the nervous and circulatory depression, it usually recovers with wonderful rapidity.

T. L. Bancroft[2] states that the venom of the black-snake paralyzes the nerve centres in the spinal cord primarily, and this is the cause of death; it paralyzes without producing convulsions. The muscular terminations of motor nerves are not paralyzed early as by curara, but do eventually become paralyzed, as also do the muscles, and, indeed, every part of the organism, so that snake venom is a protoplasmic poison.

Signs of Snake-Bite.—W. C. C. Macdonald[3] gives the following signs of snake-bite: Complete bite: Marks of the teeth of the lower jaw, in addition to the two punctures; a history of the snake holding on for a longer or shorter period; œdema in the tissues surrounding the punctures; ecchymosis and bleeding or oozing from the fang punctures. Incomplete bites may represent anything from two punctures to mere scratches of the cuticle. The presence of œdema

in an incomplete bite would point to some poison being injected, which might be enough to cause symptoms, but not death, in an adult.

TREATMENT.—Martin[4] considers that when a person has been bitten by a poisonous snake our efforts to influence the result may take three directions : (*a*,) To prevent the absorption of the poison ; (*b*,) To counteract or lessen its effect on the organism ; (*c*,) To hasten its elimination.

With the first object a ligature should be tightly applied to the limb above the situation of the bite. Free incision should then be made into the subcutaneous tissue in which the poison was injected. The wound may be sucked with advantage, and an attempt to express the poison should be made by bandaging the limb downwards from the ligature to the region of the bite.

Ligaturing the limb delays the absorption of the venom in another way than by merely placing a mechanical obstacle to the circulation. The anæmia, assisted by the local influence of the poison, profoundly affects the walls of the blood-vessels. This is indicated by the œdema of the limb which follows on the removal of the ligature. In this condition absorption is much delayed, for rabbits withstand an amount of black-snake venom, equivalent to five or six times the fatal dose, with little or no constitutional disturbance and without further treatment, if an elastic ligature be immediately applied above the seat of inoculation, and allowed to remain on for twenty minutes.

When the venom has once reached the circulation, the chances of combatting its effect are not hopeful. **Ammonia** was used for many years. Müller[5] considers **Strychnia**, used fearlessly, to be an antidote. **Chloride of Lime** is also sometimes used. Large doses of alcohol are to be condemned.

REFERENCES.—[1] "Proceedings of the Royal Society of N. S. W.," vol. xxix., 1895 ; [2] "Austral. Med. Gaz.," Feb. 15, 1893 ; [3] Ibid., July 20, 1895 ; [4] "Hermes" (Sydney), Dec. 4, 1895 ; [5] "On Snake Poison," L. Bruck, Sydney, 1893.

James Cantlie, F.R.C.S.

The **Serum** treatment of snake-bite has, during the past twelve months, emerged from the stage of scientific curiosity to become a practicable and valuable means of treatment. Calmette, at the British Medical Association meeting at Carlisle, July, 1896, stated his methods and conclusions.

The method of preparing the serum, for anti-venomous purposes, consists in injecting horses with increasing doses of cobra venom, diluted with decreasing quantities of a weak solution of the

hypochlorite of calcium. By the addition of the lime salt, a limit is set to the toxic action of the serum. The horse, about to be immunised, is injected at intervals with the venom of several species of snakes. The immunising process lasts for a period of fifteen months.

The practical out-come of the treatment is up to the present very limited, but two undoubted cases of successful treatment are before us, and the well known immunity bestowed on animals by the anti-venene inoculations points to the serum as being possibly a potent and reliable therapeutic agent. (See also "Serpent Venom," p. 67.)

SOFT SORES (Treatment of). *Priestley Leech, M.D., F.R.C.S.*

Neisser[1] recommends the use of **Carbolic Acid** in the treatment of soft sores. Its advantages are that no inflammatory induration is caused, and the diagnosis is not obscured. Silver nitrate may cause induration. As a rule, one application was sufficient, and the subsequent treatment is that of a simple ulcer.

Frank[2] says **Formaldehyde** (40 per cent. solution) is as efficacious as carbolic acid ; it is slightly more painful, but it modifies with remarkable rapidity the virulence of the chancre. Twelve hours after the application, the ulcer becomes remarkably dry. The solution is applied by a cotton wad, wrapped round a probe, and a simple gauze compress over the sore. Formaldehyde never causes induration, and one application as a rule suffices.

Another application[3] is :—

Menthol	grns iij	Alcohol (90 deg.)	℥ss
Carbolic Acid	grns xv		

Touch the ulcer with this solution every morning, for two or three consecutive days, and then cover sore with **Acetanilid.**

REFERENCES. — [1] "Berlin. klin. Woch," 1895 ; [2] "Wien. med. Presse," p. 1517, xxxvi., 1895 ; [3] "Med. Record," Nov. 23, 1895.

SPINE AND SPINAL CORD (Surgery of the).

William Thorburn, F.R.C.S.

During the past year no great advances have been made in this branch of surgery, but numerous cases have been received which serve mainly to confirm earlier conclusions.

Page[1] contributes a brief article on injuries of the spinal cord in which he dwells strongly upon the recognized importance of the presence or absence of the deep reflexes as indicating respectively partial or total destruction of the cord. With respect to inflammatory disease an important contribution to our knowledge of acute osteomyelitis of the spine is summarised under the heading "Vertebræ" *(q.v.)*,

and a separate article is also accorded to recent developments of our knowledge of the diagnostic and possible therapeutic value of "Paracentesis Spinalis" (*q.v.*).

REFERENCE.—[1] "Lancet," Feb., 1896.

SPLEEN (Surgery of). *A. W. Mayo Robson, F.R.C.S.*

Splenopexie for Wandering Spleen.—The result of physiological research has led to a clearer knowledge of the function of the spleen, and has shown how important its function is to the well-being of the whole system. Sykoff[1] calls attention to this fact, and shows from experiments which he has performed that the following conclusions may be deduced in favour of splenopexie as opposed to splenectomy: (1,) By means of a catgut net the spleen may be fixed firmly and securely to the abdominal parietes; (2,) For this purpose it is sufficient to fix only the middle half of the spleen; (3,) The spleen is somewhat decreased in size by the contraction of the newly formed scar-tissue; (4,) It retains its function; (5,) The prime factor in the fixation are the connective-tissue bands, which replace the catgut; (6,) Any form of irritation or scarification of the surface of the spleen is unnecessary and harmful, as it produces adhesions to neighbouring structures—as the intestines—and the catgut, if not perfectly aseptic, is more liable to produce suppuration.

In regard to the physiological function of the spleen the author's conclusions are as follows: (1,) Extirpation of the spleen can be possible without harmful results only exceptionally, and then only when the other blood-making organs are healthy; (2,) Instead of splenectomy, in cases of local lesions, resection should be employed; (3,) Splenectomy is indicated when the spleen is the seat of a primary tumour, though not in cases of secondary involvement; and finally in cases where the pathological changes are so great that there is no hope of the remaining portion assuming its normal function; (4,) The wandering spleen must and can be fixed; (5,) The spleen fixed by catgut has its normal function; (6,) The fixed spleen decreases in size, which is of value in cases of hypertrophy; (7,) When the spleen is prolapsed anteriorly an attempt should be made to replace and fix it.

Kouwer[2] reports two cases of wandering spleen for which he attempted fixation by a method different from that employed lately by Rydygier. Both cases were operated upon four years ago. An oblique lumbar incision was made below and outside the kidney, the spleen pressed into the wound by an assistant, and, an attempt at suture having been given up on account of the hæmorrhage it caused, the wound was packed with gauze down to the organ where it lay ex-

posed by an incision in the peritoneum. In the first case the tampon was kept in for about a month, the wound healing by granulation. This patient still remains well. In the second case there were symptoms of intestinal obstruction which compelled the entire removal of the tampon within six days, and this patient had an early relapse. Kouwer acknowledges that the spleen is secured in an unnatural position by this operation, but claims that the essential thing is to secure the organ in some fixed position where it can do no harm, the situation being less important than the fixation.

Giordano[3] reports the case of a girl, aged ten years, who had suffered from enlargement of the spleen and liver since early infancy. During the last three years the splenic tumour had increased; there was hæmorrhage from the gums and nose, attacks of severe abdominal pain and profound anæmia (42·5 per cent. hæmoglobin, 4,800,000 red corpuscles, 8,750 white). The lower margin of the liver came down to three fingers' breadth below the costal arch. The lower margin of the spleen, which was slightly tender, was felt two fingers' breadth above the crural arch and one finger's breadth from the umbilicus. No enlarged glands were felt in other parts of the body. There was no albuminuria. After fifteen days' daily intra-muscular injection of 10 centigrammes of **Arseniate of Quinine,** the splenic tumour was reduced to half its volume, and when lifted upwards was found to drop back towards the pelvis. The subjective symptoms were not relieved. Laparotomy was performed along the exterior margin of the right rectus. The spleen was found to be four times its normal size, the hilum prolapsed and on a level with the umbilicus; the organ was hard and dotted with fibrous patches, and it could be raised upwards, so that the lower pole corresponded to the umbilical level. The spleen was fixed to the abdominal muscles in a kind of aponeurotic peritoneal sac, the sutures passing through the splenic tissue as far as possible where the fibrous patches existed. The post-operative course was apyretic. The anæmia was treated by injections of **Ferri et Ammon. Cit.** (5 per cent.) and of **Pot. Iod.** (5 per cent.). When the child left the hospital she had a good colour (hæmoglobin 46 per cent.). The spleen remained fixed, and the child could run and walk without any pain or any recurrence of the abdominal spasms, which used to occur previously after exertion.

Splenectomy for Rupture.—Mr. Bernard Pitts and Mr. Charles A. Ballance[4] report the case of a boy, aged ten years, who, five days previously, whilst batting at cricket, had been struck by a "full pitch" on the left side. After the injury he had been in much pain, but this had passed off until a few hours before admission, when it re-

curred. On admission (under Mr. Ballance), he was collapsed and in severe shock; the abdomen was tender and prominent; slight bulging of the flanks; percussion note dull in both flanks. On change of position the dulness could be made to disappear entirely from the right, but not entirely from the left side. A small incision was made below the umbilicus, and on opening the peritoneum a large quantity of fluid blood gushed out. A rupture of the spleen being suspected, a four-inch incision was made in the upper part of the left linea semilunaris, which exposed a large quantity of clot. This was removed, and it was seen that the spleen was severely ruptured on its phrenic and renal surfaces.

Regeneration of the Spleen.—Laudenbach[5] relates the history of a dog in which the spleen was almost completely extirpated. Six months later the organ was found to have been completely regenerated. At the spot where the mesentery had been ligatured was a twisted mass of new fibrous tissue, from below which a fibrous band carrying blood vessels passed to the newly-formed spleen. Other vessels passed to the regenerated organ in a newly-formed mesentery.

REFERENCES.—[1] "Archiv. für klin. Chir.," Bd. li. Heft 3, 1895, "Amer. Journ. Med. Sci.," March, 1896; [2] "Wien. klin. Woch.," 1895, p. 752, "Amer. Med. and Surg. Bull.," Feb. 29, 1896; [3] "Rif. med.," Feb. 8, 1896, "Brit. Med. Journ.," March 14, 1896; [4] "Clin. Soc.," Feb. 14, 1896; [5] "Brit. Med. Journ." Epitome, April 11, 1896, "Virch. Arch.," Bd. 141.

STERILITY. *Theophilus Parvin, M.D., Philadelphia.*

Graefe[1] gives the following causes of sterility: (1,) Anomalies of the hymen or malformations of the genital tract. A very large vagina can also be a cause of sterility, as the seminal discharge escapes immediately after coition; (2,) Vaginismus; (3,) Excessively acid reaction of the vaginal mucus, which destroys the power of motion of the spermatozoa; (4,) Narrow external or internal os, anteflexion, retroflexion, endometritis, gonorrhœa, especially if the appendages are involved, neoplasms; (5,) Constitutional diseases, as tuberculosis, syphilis, chlorosis, and obesity.

REFERENCE.—[1] "New York Medical Record," from "Cent. f. Gynäkol."

STOMACH (Diseases of the). *W. Soltau Fenwick, M.D., M.R.C.P.*

PHYSIOLOGY.—By the adoption of an elaborate procedure Oppler[1] has been able to gauge with great accuracy the secretion of pepsin in different diseases of the stomach. From his researches it would appear that the production of pepsin is especially diminished in cases of chronic gastritis. In cancer of the stomach the secretion

is also less than normal, particularly when the growth affects the body of the organ, but in cancer of the pylorus pepsin can usually be found even in the absence of hydrochloric acid. In atony and dilatation of the organ, a diminished secretion of pepsin is only observed when catarrh associated with a lessened production of acid is also present. Increased pepsin formation occurs in ulcer of the stomach, acid gastritis, chronic gastro-succurrhœa, and occasionally in chlorosis; whereas subacidity and most secondary diseases of the stomach show a diminution of the ferment. In nervous dyspepsia the results are variable. Pepsin secretion, as measured by the activity of the pepsin, appears to run parallel with the secretion of hydrochloric acid, but the correspondence is not complete.

Kirikow[2] has recently examined the gastric juice in six cases of hypertrophic cirrhosis of the liver with icterus. He finds that the total acidity of the stomach contents is less than normal, and that free hydrochloric acid is diminished, and often absent altogether. Small quantities of organic acids can usually be detected. The digestive power of the secretion is notably decreased and the activity of the rennet ferment diminished. The motor functions of the stomach, on the other hand, remain satisfactory.

Turck[3] has investigated the toxins of the stomach in cases of gastritis associated with dilatation. He finds that when the contents of the organ are rendered sterile by repeated filtration, and then injected into rabbits in the proportion of 8 c.c. per kilo of the body-weight, paralysis of the hind quarters occurs within an hour and a half, and in slightly larger doses (12 c.c.) death results within three hours. Concentration of the fluid *in vacuo* does not impair its poisonous properties. On the other hand, exposure of the gastric contents to a temperature of 158° F. for four hours, with subsequent filtration, renders the fluid far less toxic.

Chemistry.—Einhorn reports that Toepfer's test (dimethyl-amido-azobenzol) for free HCl is twice as delicate as that of Gunzburg. He finds, however, that it fails if lactic acid be present, even to the amount of $\frac{1}{10}$ per cent. It is also useful as a quantitative test.

Bacteriology.—Kellog[4] has examined bacteriologically the contents of the stomach in three hundred and seventy-seven cases, with the result that in 50·8 per cent. the organ was found to be completely aseptic. This result appears to confirm the belief that the healthy stomach is able to destroy the microbes which obtain entrance to it through the mouth, and that bacteria play no part in normal gastric digestion. A comparison of the results of the bacteriological with those of the chemical examination of the stomach may be summarised

as follows: Of the one hundred and ninety-one sterile cases, eighty-three were cases of hyperpepsia, eighty of hypopepsia, and in twenty-eight the amount of chlorine eliminated was normal. Of the eighty-three cases of hyperpepsia, combined chlorine was in excess, and free hydrochloric acid was normal, or in excess, in fifty-five cases; in twelve cases free hydrochloric acid was deficient, and in one it was absent. Combined chlorine was deficient, or less than 1·55 milligrammes per 100 cubic centimètres, in sixteen cases. Of the eighty cases of hypopepsia, hydrochloric acid was deficient in sixty-eight, and normal, or in excess, in twelve. It thus appears that a sterile condition of the stomach fluid may exist in hypopepsia, as well as in hyperpepsia, and it was, indeed, a somewhat surprising fact that in 42 per cent. of the sterile cases hypopepsia existed, whereas hyperpepsia was found in only 43 per cent. of the cases. In 48 per cent. of the cases in which bacteria were absent, free hydrochloric acid was less than normal in quantity, being below 25 milligrammes per 100 cubic centimètres of stomach fluid, and in 23·5 per cent. it was absent altogether.

It was noticeable that anaërobic germs were found most abundant in cases in which the total acidity, the free hydrochloric acid, the co-efficient of liberation, and the co-efficient of absorption were the lowest. It appears that the anaërobics flourish better in an acid medium, or perhaps resist the influence of the hydrochloric acid better than the aërobic.

The co-efficient of absorption in the class of anaërobic infected cases was ·38 as compared with ·34 in the sterile cases.

Diagnosis of Gastric Disease.—Planck[5] gives an excellent description of the diagnostic and therapeutic value of Turck's gyromele. This instrument consists of a flexible cable to the end of which is attached a spiral spring covered with a sterilized sponge. The cable passes through a rubber tube, and is attached to an apparatus which is capable of producing revolutions of the sponge. To determine the outlines of the stomach the tube is introduced into the organ and the apparatus set in motion. The revolving sponge can be easily palpated through the abdominal wall along the whole length of the greater and lesser curvatures. When the tube has been withdrawn the contents of the sponge are squeezed out and submitted to a chemical and microscopical examination. The gyromele can be used with advantage as a therapeutic agent. In chronic catarrh of the stomach the revolutions of the sponge are extremely useful in effecting the removal of mucus from the surface of the inflamed mucous membrane, while in atonic conditions of the organ the friction thus applied

to its inner surface is a valuable stimulant to the muscular tissue. In some cases of hyperacidity the employment of the instrument has been found to diminish the activity of the gastric secretion, and at the same time to relieve the constipation which usually accompanies this functional disorder of the stomach.

To determine the size and position of the stomach, Boas advocates the use of a soft Nélaton sound, to the lower end of which a sponge is attached. Rotation of the tube can easily be felt through the abdominal wall, and in this manner the lower border of the stomach can easily be explored. The examination is best made when the stomach is empty and the patient in the recumbent or upright position. The introduction of a litre of water has no effect upon the lower limit of the organ, but with 1½ litres the fundus sinks to the extent of 1 to 3 centimètres.

In the diagnosis of various affections where it is inconvenient to pass a tube, Boardman Reed[6] finds definite knowledge can be obtained by percussion and clapotement, the former being the most reliable. The examination should be carried out six hours after a meal, or before breakfast. If clapotement can then be heard there is sufficient motor power, and the boundaries should be determined by percussion, first in the recumbent and afterwards in the upright position. The patient should then drink ½ of a litre of water, and the examination be repeated; after which another ½ should be given, and the same tests be again employed. If clapotement is heard with the smaller amount the motor power is doubtful, and if the dulness extends farther downwards with successive draughts of water an atonic condition is present. The writer distinguishes: (1,) The normal stomach, where no splash is heard till the stomach is partly full, and often not even then. The position of the boundaries is normal. (2,) The atonic stomach. A splash may be heard four to six hours after a full meal, or a little water will develop it decidedly. Percussion will show delayed emptying of the organ. (3,) Megalogastria, or enlarged stomach with good motor power. The lower border may not be higher than the umbilicus, but there is no splash when fasting. (4,) Dilatation or gastrectasia. A splash is heard when fasting; percussion shows enlargement and delay in emptying. (5,) Gastroptosis, or downward displacement of a normal stomach. The splash is rather more easily obtained; percussion shows that the upper and lower boundaries are both depressed. (6,) Gastroptosis combined with an enlarged but not atonic stomach. (7,) Gastroptosis and dilatation. (8,) Pyloroptosis, where the pyloric end is displaced downwards, and the area of dulness is normal in size but vertical in position. The splash is heard far below the usual level, even when the motor power is quite normal.

(9,) Pyloroptosis with dilatation The splash is found when fasting, and the area of the pyloric end is widened.

Gastrodiaphany.—Meinert[7] criticises the method of Martius and Meltzing, who claim to have shown that the normal empty stomach extends further up into the epigastrium than has hitherto been admitted, and that in the full state the organ reaches normally below the umbilicus. He shows by experiment that the appearances which result from the introduction of an electric lamp into the stomach vary very much with the position of the sound; thus, when it is behind the liver the stomach region is not illuminated at all, and all that is seen is a patch of light far to the right of the umbilicus. On the other hand, when the light is brought near the greater curvature, the adjoining colon is also illuminated to a greater or less extent. In dilatation of the stomach the method allows of a fairly accurate estimation of the position of the greater but not of the lesser curvature. Meinert concludes that electrical illumination may be of great service in the diagnosis of tumours in the splenic region, and of enlargement of the spleen, and also in the topographical confirmation of many palpable tumours of the stomach and its neighbourhood; but in the estimation of the position, size, and form of the stomach its indications are extremely fallacious.

Gastroscopy.—Rosenheim[8] discusses the position of the cardia and the course of the lowest part of the œsophagus. He concludes that the usual position of the cardia in the adult is opposite the twelfth, rarely the eleventh, dorsal vertebra. The anatomical relations are important in respect to the gastroscope. He maintains that where it is impossible to pass a stiff tube into the stomach with the patient in the dorsal position, the difficulty is due to muscular cramp or to the physiological bend at the œsophageal foramen in the diaphragm. By introducing the rigid tube from the right side of the mouth, and pressing the point to the left, the lowest part of the œsophagus can be readily passed. In a minority of cases with disease involving the cardia, the parts can not be distincly seen by the gastroscope without an anæsthetic. The author then refers chiefly to Mikulicz's investigations into œsophagoscopy. This authority used a curved tube in order to overcome the difficulty of passing through the lowest part of the œsophagus, as he thought that it was impossible to accomplish this with a straight tube. This curve introduces difficulties in respect to the optical arrangements. The author maintains that the optical apparatus should be in the straight line. His observations lead him to say that in nearly 70 per cent. of the cases examined by him a straight gastroscope can be passed into the stomach. Under certain

conditions, however, such as an abnormal curving of the œsophagus due to pathological causes, it may be impossible. A local spraying with cocaine by means of a special apparatus has been tried by the author to overcome the cardiospasm, but with indifferent success. He concludes that with few exceptions it is possible with a straight or slightly curved instrument to get deep enough into the stomach for gastroscopic purposes without an anæsthetic and without doing any injury. One gastroscope will not suit all cases, but a straight instrument suffices in most of them. The author gives details of his gastroscope, which is made by Hirschmann, of Berlin.

I.—Cancer of Stomach.

Dreschfield[9] writes on early diagnosis where no tumour can be felt. In elderly people there may be no emaciation, and at first only diminished appetite and distaste for nitrogenous food. Pain and occasional vomiting after food then appears, and the epigastrium is painful. There is soon to be found an absence of HCl, and the presence of lactic acid. In patients from forty-five to fifty-five, emaciation, pain, and loss of appetite occur at an earlier stage. The disease has to be diagnosed from chronic gastric catarrh, where there is little loss of flesh, much stringy mucus vomited, and relief under careful diet; from atonic dyspepsia and the dyspepsia of neurasthenia, where there is often displacement of some of the viscera, such as a floating kidney, and, lastly, from gastric ulcer.

Hydrochloric Acid in Cancer.—Stockton[10] relates the case of a woman thirty-six years of age, who had suffered from vomiting for two years, and presented a well-marked tumour in the region of the pylorus, with a dilated stomach. The contents of the organ possessed a high degree of acidity which was dependent upon an excess of free hydrochloric acid, lactic acid being absent. An exploratory incision proved that the tumour was due to cancer of the pylorus, and gastro-enterostomy was performed. Arkawin[11] also records an instance of free hydrochloric being secreted by a cancerous stomach.

Lactic Acid in Cancer.—Allen Jones[12] states that Boas' dictum concerning the presence of lactic acid in cases of cancer of the stomach has afforded him valuable assistance in the diagnosis of the disease, as in several cases he was enabled to assure himself of the presence of carcinoma before the development of a palpable tumour.

Hammerslag[13] has examined the contents of the stomach in two hundred and fifty cases, but only in thirty-three detected the presence of lactic acid. In all but three of these cases cancer of the stomach was present.

Van Noorden[14] describes a case of chronic ulcer of the stomach which had contracted adhesions with the pancreas. Lactic acid was always present in the gastric contents. Bial also relates a case of dilatation of the stomach where the diagnosis of cancer was made on account of the abundance of lactic acid. The necropsy showed, however, that the gastric dilatation was due to the contraction of a simple ulcer near the pylorus, while the mucous membrane was in a condition of atrophy. The frequency with which lactic acid occurs in cases of gastric carcinoma has been explained by Martius in the following way: In order that lactic acid may be formed in the stomach, it is necessary that the secretion of hydrochloric acid should be deficient and the muscular power of the stomach enfeebled. As it is chiefly in cases of cancer that these two conditions are fulfilled, it follows that lactic acid will more often be found in cancer of the stomach than in any other disease.

Leucocytosis after meals.—Schneyer's discovery that the blood of persons suffering from cancer of the stomach does not exhibit the usual increase in the number of white blood corpuscles after an albuminous meal, has led Hartung[15] to investigate the subject more fully. This observer finds that in healthy persons the ingestion of an highly albuminous food (milk, eggs), containing one grain of nuclein prepared from calf's spleen, is followed within three hours and a half by a vast increase in the number of leucocytes in the blood. In the subjects of gastric carcinoma no leucocytosis results from such a meal, while the red corpuscles as well as the eosinophile corpuscles gradually diminish in number as the cachexia progresses. Hartung considers that these blood changes in cancer are due to the toxic action of the products of the malignant growth upon the hæmatopoietic organs, and claims that his researches indicate the value of systematic examination of the blood in doubtful cases of internal cancer.

II.—Dilatation of Stomach.

Etiology.—Pyloric Obstruction from Gall Stones.—Galliard[16] has recently reviewed this subject in an interesting manner. He comments on the rarity of the condition, and the still greater rarity of its appearance at the *post-mortem* table. He cites several interesting cases where faceted gall stones were vomited by the patient, or even extracted with a stomach-tube. The mechanism of the obstruction would seem to be variable. In one class of cases the stone or stones ulcerate into the stomach cavity, adhesions having first formed, and finally block the orifice of the pylorus. Again, when adhesions have taken place between the pylorus and the gall-bladder, the former

becomes a fixed point, and, as it can no longer recede before a gall-bladder distended with stones, the pyloric lumen can be occluded by their pressure. The obstruction may at first be only partial, but, the pylorus being fixed, the gradually distending stomach drags more and more upon it and in this manner increases the occlusion. The condition would seem to be difficult of diagnosis, except in those cases where gall stones are vomited or brought up by the stomach-tube.

TREATMENT.—According to Cornet[17] **Skim Milk** is especially valuable, and its digestibility may be increased by the addition of a small quantity of brandy. Tea and coffee may be given in small quantities, also beef tea and port wine. Mineral waters should be forbidden. When there is intense thirst, small pieces of ice may be allowed, also iced milk, coffee, or tea. **Dover's Powder** may also be prescribed, the dose being 8 grains. **Nutritive Enemata** consisting of eggs, peptones, bouillon, and red wine have been recommended for gastric insufficiency of the first degree, and they may be administered two or three times a day. Smoked and salt meats are preferable to fresh and juicy meats, and fruits and vegetables which contain much water should be avoided. Bread should be eaten toasted. Butter and cocoa may be recommended in small quantities.

Lavage of the stomach is valuable, especially if there is excessive stagnation of the alimentary residue. This treatment is employed most advantageously in the morning, although where there is great pain and nausea it should be done at night, and in serious cases both night and morning. The more rapid the amelioration obtained by lavage, the more favourable will the prognosis of the disease be. This treatment gives satisfactory results, especially in cicatricial stenosis and in atonic dilatation. Electricity and massage are also indicated, and hydrotherapy may be employed with advantage.

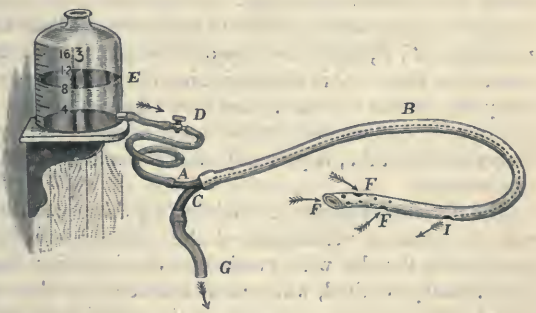

Fig. 51.

Hemmeter[18] has invented a stomach tube (*Fig.* 51) by which it is possible to perform lavage with a continuous current.

"The apparatus consists of a glass jar or reservoir, *E*, which may be of varying capacity, as it probably in most cases of gastrectasia will have to be filled from time to time during the lavage. This is best done by having a tube running up to it from a combination faucet, by which hot and cold water can be mixed to a suitable temperature and constantly supply it above as it runs out into the tube at *D*.

When the douche is given in the sitting position, the glass reservoir should be about twelve inches above the patient's head; though any convenient shelf will answer, as with increasing pressure, if the outflow is too great, it can be controlled with the stopcock *D*.

The portions *A* (inflow) and *C* (outflow) are made of hard rubber to which the double tube proper is fastened.

From the exterior this tube *B* looks like any other soft, single stomach tube; a cross section, however, would show that it is constructed of one tube within the other.

From *A* to *I*, the point where the inflow discharges into the stomach, along the dotted line *A I*, and firmly moulded against one side of the larger tube *B*, is a smooth tube of smaller calibre which conducts the water from the reservoir into the stomach.

The opening or outlet of the inflow tube is fourteen centimètres distant from the lower end of the tube and the outflow openings, thus compelling the current to circulate through the stomach before it can reach the outflow openings. All gastric tubes must be within the stomach to a distance of fifteen centimètres at least before they siphon properly. *F*, *F*, and *F* are the outflow openings at the lower (gastric) end of the tube. *G* is the beginning of the discharge tube to conduct away the outflow; it can be led into a bucket or sink or the like. The contour of the smaller inflow tube, which is contained within the larger outflow tube, is perfectly smooth, and presents no uneven edges or corners."

The practical advantages claimed for this apparatus are that by its use the mucous membrane of the stomach can be subjected to a continuous douche with much less manipulation than is required in the ordinary method, while such accidents as the swallowing of the tube or the aspiration of pieces of the gastric mucous membrane are rendered impossible. On the other hand the contraindications to the use of the continuous douche are the same as those in the case of the ordinary siphon, and are shortly as follows:—

I. All constitutional and local diseases in which the complaint would be aggravated or life endangered by the irritation and exertion of lavage. Among these could be mentioned: (1,) Pregnancy; (2,) Heart diseases in a state of defective compensation—cardiac

neuroses, angina pectoris, myocarditis, and fatty heart in advanced stage; (3,) Aneurysm of the large arteries; (4,) Recent hæmorrhages of all kinds, including apoplexies, pulmonary, renal, vesical, gastric, and rectal hæmorrhage and hæmorrhagic infarctions; (5,) Advanced pulmonary tuberculosis; (6,) Advanced pulmonary emphysema with bronchitis; (7,) Apoplexia and cerebral hyperæmia; (8,) Advanced cachexia; (9,) Presence of continued or remittent fever.

II. Certain diseases of the stomach such as: (1,) Ulcer with recent hæmatemesis and dark stools; (2,) Palpable carcinoma of the pylorus, with vomiting of coffee-ground material and the classical symptoms of cancer; (3,) Many gastric neuroses in which the character of the malady is clear without lavage; (4,) Stomach or intestinal troubles with acute fever; (5,) Gastric mucosa easily incited to bleeding; (6,) Secondary gastric affections whose dependence upon a distinct and more important primary disease is evident.

III.—Inflammation of Stomach.

Pathology.—Boas[19] discusses the pathology of acid gastritis, and shows that in many cases small pieces of the gastric mucosa become detached during the course of the disease and may be recognized in the washings of the stomach. Microscopical examination of these bits of tissue shows the existence of interstitial inflammation.

In a report to the British Medical Association upon the pathology of infantile marasmus, Soltau Fenwick[20] shows that although the stomach and intestines in these cases usually appear quite normal to the naked eye, the microscope invariably reveals severe catarrhal changes which eventually end in atrophy of the mucous membrane. The existence of this insidious disease, the various stages of which are well illustrated by numerous photomicrographs, fully explains the progressive emaciation which characterises the complaint as well as its tendency to terminate in a fatal manner. A full account is also given of the chemistry of digestion in these cases, and the diagnostic and prognostic value of the disappearance of the hydrochloric acid which occurs, is fully discussed. It is also shown that coincidently with the destruction of the gastric mucous membrane the quality of blood steadily deteriorates, so that in extreme cases the percentage value of the corpuscles often falls below 50, and that of the hæmoglobin below 45. Finally the writer points out that the signs of chronic gastric catarrh contracted in infancy may be recognized in the stomach in adult life, and suggests that in many cases where chronic dyspepsia attacks delicate children after the age of puberty, the

functional disorder may depend upon a damaged state of the organ from previous inflammation.

TREATMENT.—Reale[21] has performed irrigation of the stomach with **Nitrate of Silver** in twenty cases of chronic gastritis. At first the irrigations were made with a solution composed of 3 grains of nitrate of silver in 5 drachms of distilled water, but afterwards the strength was increased, and 22 grains of the salt were employed on each occasion. Immediately after use of the silver nitrate the stomach was irrigated with a 5 per cent. solution of common salt. The results were as follows: The first effect observed was an increase in the motor activity of the organ accompanied by an increase in the secretion of hydrochloric acid. In all cases vomiting was speedily checked and the patients gained in weight and muscular power.

Stewart[22] also speaks highly of the nitrate of silver in chronic inflammatory affections of the stomach. In such cases the mucous membrane of the organ should first be thoroughly cleansed, and afterwards sprayed through the double stomach tube with a 9 in 1000 solution of the silver salt.

Aulde[23] strongly recommends **Hydrozone** or **Peroxide of Hydrogen** as a gastro-intestinal antiseptic. He states that in cases of gastritis accompanied by abundant secretion of mucus the administration of hydrozone in the strength of 1 part to 32 of sterile water at once removes the mucous contents of the stomach, and at the same time acts as a powerful germicide. After each dose the patient should recline upon his right side in order to favour the expulsion of the gastric contents into the small intestine. The writer also recommends **Glycozone,** composed of glycerine and peroxide of hydrogen, in cases of catarrh and ulceration of the stomach.

Soltau Fenwick,[24] in an article dealing with catarrhal affections of the stomach and intestines in infancy, speaks strongly in favour of antiseptics in the treatment of these diseases. In the early stages of the acute complaint **Calomel** in doses of $\frac{1}{6}$ to $\frac{1}{4}$ of a grain every two or three hours, or **Castor Oil** in the form of an emulsion and combined with solution of **Perchloride of Mercury**, are of the greatest value. In chronic or obstinate cases recourse should be had to **Resorcin** in combination with **Carbonate of Bismuth**, 4 grains of the former and 5 of the latter being administered every three hours. **Benzo-Naphthol** in full doses is often of service in cases of follicular ulceration of the large intestine, but in the opinion of the writer the salicylates of sodium and strontium present no advantages over the other and cheaper drugs.

IV.—Neuroses of the Stomach.

La Torre[25] maintains that the primary cause of uncontrollable vomiting in pregnancy is a complex lesion in the cervix determined by the pregnancy itself. The cervix is congested, there is venous stasis with œdema, compression of the nerves, with irritability of the muscular fibre. These morbid conditions give rise to vomiting as a reflex symptom, and consequently require immediate attention. In ordinary cases Torre recommends the application of **Glycerolate of Ichthyol** by means of a tampon. In severe cases mechanical dilatation with the induction of labour is necessary.

Sawyer[26] writes upon the value of **Arsenic** in cases of nervous gastralgia. The drug is best administered in the pill form, $\frac{1}{24}$ of a grain of arsenious acid being made up with 3 grains of the extract of gentian and given three times a day between the meals. This remedy should be continued for some weeks. In severe cases counter-irritation to the epigastrium and a restricted diet are useful adjuncts to the medicinal treatment.

Apostoli[27] has found **Galvanization** of the pneumogastric nerves an effective treatment for all forms of nervous and reflex vomiting. The electrodes, which are of small size and well protected, are placed a little to the outer side of the inner end of the clavicle, just at the point of the interval between the two tendons of the sterno-mastoid. A current of five to ten milliamperes is used, but as much as twenty milliamperes may be employed if necessary. The strength of the current is proportioned to the severity of the vomiting and the effect produced. The application should last from five to sixty minutes. Some obstinate cases are cured by a single application, but as a rule several repetitions are required to effect a complete cure.

Bonnefin[28] reports an interesting case of persistent hysterical vomiting which was cured by thirty-one daily electrisations of the pneumogastric nerves. The faradic current was applied immediately after the ingestion of food, and the electrodes were maintained in position until either the food was fully digested or nausea had disappeared. The food could only be retained and digested while the current was being applied. The vomiting completely ceased at the end of the month, and the patient gradually regained her strength and appetite.

V.—Ulcer of Stomach.

Treatment.—Crämer[29] speaks of the importance of large doses of **Bismuth Subnitrate** in the treatment of gastric ulcer. He first refers to the various views held by different observers on the value of bismuth in this disease. Fleiner's method consists in washing out the stomach in the

early morning, and introducing into it 10 to 20 g. of bismuth subnitrate in 200 c.cm. of water; 50 c.cm. of water is run in afterwards. In five to six minutes the bismuth is deposited over the stomach, so that a clear fluid can be drawn off. The patient then remains in a position in which the bismuth is supposed to come best in contact with the ulcer for half an hour, when he breakfasts. The results, according to Fleiner, are exceptionally good. The action of the bismuth is: (1,) Mechanical; (2,) Physiological on the nerve endings, and (3,) Antiseptic. Symptoms of poisoning were never observed, even with very large doses of the salt, although poisoning has been known to occur after the external application of bismuth. Of course, caution is necessary. The patient should be told that the stools will be black. The author has employed Fleiner's treatment, with this exception—that the stomach tube is not used. He gives 8 to 10 grammes of bismuth subnitrate suspended in water on an empty stomach. A suitable position, as described above, is then adopted. Details are given of some twelve cases. Good results may be obtained with this treatment even when the patient is not on a strict diet. In ten out of twelve cases the results could hardly have been more satisfactory. The author strongly recommends this treatment, especially in the chronic cases of gastric ulcer.

Paul Cornet[30] advises when hæmorrhage is present, that not even ice should be given by the mouth; **Ergot** should be injected in the neighbourhood of the stomach, and nutrient enemata employed. A blister or ice compress and opiates may be useful. Some days after hæmorrhage has ceased warm liquid food may be given, such as milk, beef-tea, and egg emulsions. In the second week hot compresses are constantly employed, and Carlsbad salts night and morning with the previous diet. The salts are continued for six weeks, the diet being gradually relaxed, but raw fruits, highly-seasoned food, and hot or iced drinks must be avoided for a long period. If there has been no hæmorrhage, various plans of treatment give good results. Thus Cornet refers to Donkin's method of rectal feeding for two or three weeks and **Hot Compresses** on the epigastrium; also to Fleiner's use of large quantities of **Bismuth** after lavage of the stomach, and to the administration of **Belladonna** and **Codeia** by Boas.

Blume[31] briefly reports sixteen instances of acute and subacute cases of perforation of the stomach treated without operation. All the cases were examined after death. The medicinal treatment consisted exclusively of **Opium** or **Morphine**. The feeding consisted in giving one teaspoonful of iced milk every fifteen or thirty minutes when the patient was awake, which quantity was gradually increased after a few days.

Rectal feeding was not employed. The rationale of this somewhat unusual procedure was based upon the importance of keeping up the normal functions of the stomach in order to hinder the regurgitation of intestinal contents and their overflow into the peritoneal cavity. Blume lays great stress on this mode of feeding. The importance of reliable trained nurses and of the suitable position of the patient is also emphasized.

Blume then reviews seventeen cases from the literature, especially the English, in which operation was performed.

Comparing the cases treated medically with those treated by surgical means, Blume states that the results of the medical treatment as shown in the series of cases described by him are quite respectable, and that the possibility of a cure without operation has been definitely established, but nevertheless the secure closure of the perforation by suture holds out more definite hopes for recovery. Blume strongly advocates the method of nourishment described in connection with the non-operative cases. The idea that the stomach must be placed at absolute rest and remain empty is illusory. Unless the normal secretory functions are kept at work, regurgitation of intestinal contents may result.

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STOMACH (Surgery of). *A. W. Mayo Robson, F.R.C.S.*

Gastropexy.—Duret[1] states that the good results of stitching a displaced kidney or uterus to the abdominal wall have led to the practice of an analogous operation in cases of the special form of displacement and dilatation of the stomach described by Glénard under the name of gastroptosis. A case is recorded by the author in which this affection,

presented in an extreme form by a woman, aged fifty-one, was successfully treated by the following operation, for which the term "gastropexy" is suggested. The first stage consists in a median incision (about four inches in length) of the anterior abdominal wall in the epigastric region. The lower half only of the exposed parietal peritoneum is incised in this wound, the upper portion being left intact for the insertion of the sutures by which it is proposed to elevate and fix the displaced stomach. This organ having been raised from the lower part of the abdomen and placed in its normal position, the pylorus and the lesser curvature are fixed to the abdominal wall in the following manner: A suture of fine silk is passed under the serous and muscular coats of the pyloric portion of the stomach along an extent of about a quarter of an inch; the needle and suture are next passed through the adjacent portion of exposed parietal peritoneum from behind forwards, carried across the front of this membrane for about a quarter of an inch, and next passed backwards into the abdominal cavity. By carrying the sutures alternately through the coats of the stomach and the parietal peritoneum three or four times a large surface of the anterior gastric wall may be brought into wide and close contact with the anterior abdominal wall. The external wound is finally closed by three rows of sutures. The real value of this operation, it is pointed out, can only be proved by extended and varied experience. Gastropexy will doubtless be a rare operation, as Glénard's disease (ptosis of the stomach in a severe form), is not of frequent occurrence. In a case complicated with marked displacement of the mass of intestine it would be easy to associate with the operation on the stomach an enteropexy of the transverse colon or of the small intestines by stitching up a fold of the elongated mesentery. Operations for fixing by sutures displaced and "floating" organs are not very serious, and claim credit for the cure of obstinate displacement of abdominal viscera, both solid and hollow, and if properly performed, are likely to remove very troublesome afflictions and to afford positive and permanent benefit.

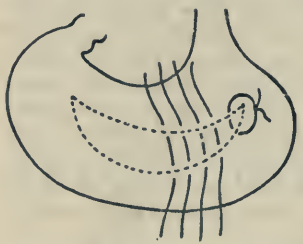


Fig. 52.—Diagram showing arrangement of sutures. The dotted line indicates the extent and shape of the inverted area of the stomach wall.

New Operation for Dilated Stomach.—The following operation (*Figs.* 52—56) was successfully performed by Dr. Wm. Ewart[2] and Mr. W. H. Bennett, St. George's Hospital. A median incision was

made five inches long, commencing above at a point an inch below the ensiform appendix. The stomach was examined through the wound and then drawn out of wound on to the parietes. A fold on the anterior aspect of the stomach was then turned in by the fingers of the assistant. The length of this fold, which followed in direction the long axis of the

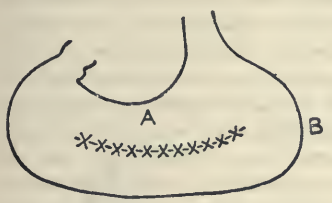


Fig. 53.—Showing alteration in the shape of the stomach by operation. *A*, sutured edges of the base of the inverted fold. The dotted line *B* indicates the position of the secondary involution for obviating the dependent tendency of the great end of the stomach, if such be necessary in the case.

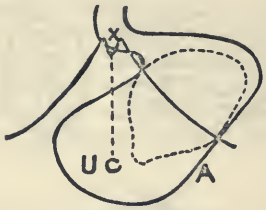


Fig. 54.—Shows tympanitic area as found by percussion before and after operation. *A*, tracing prior to operation; Dotted line shows reduced area after operation; *U*, umbilicus; right and left nipple shown; *X*, ensiform cartillage.

stomach, was about twelve inches, its greatest depth being three inches. The inverted portion was therefore about six inches in width at its widest part, and twelve inches long (*Fig.* 52). Whilst the fold was kept involuted by the assistant's fingers the peritoneal surfaces on the opposite sides of its base were brought together by numerous sutures made to transfix the peritoneal and muscular coats in the

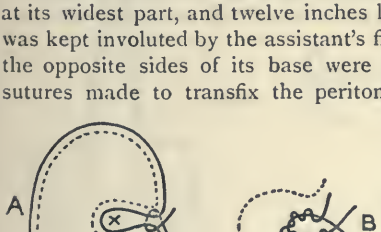


Fig. 55.—Section across the long axis of the stomach. *A* shows approximation of the edges of the base of the involuted fold *X*, produced by operation; *B* modification of sutures; dotted line indicates mucous membrane and sub-mucous tissue; the continuous line, the peritoneal and muscular coats.

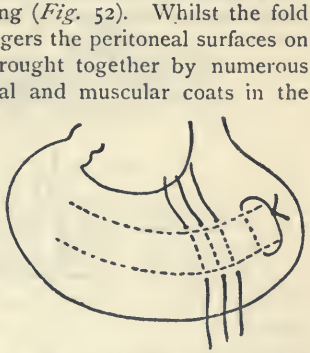


Fig. 56.—Modified plan of introducing sutures for the purpose of obtaining larger area of adhesion of the sides of the infolded flap. The result of the modification is shown in *Fig.* 55, *B*.

manner indicated in *Figs.* 52 and 55. After tightening the sutures the shape of the viscus was as in *Fig.* 53. *Figs.* 54 and 56 explain themselves. This case was operated on at the end of November and patient left hospital at end of January very much improved, and was able to

resume his work as a carpenter by the middle of June. The following note was made: Dyspeptic symptoms complained of; modified stomach splash. Area of recurrence rather larger than indicated in *Fig.* 54. The sequel of the case to be published later.

Method of Closing the Opening after Gastrostomy and Enterectomy.—Mr. C. T. Bond[3] says an oval disc of sheet india-rubber larger than the fistula is coiled up and inserted in the way described by Mr. Cripps.[4] Before passing it into the stomach it was pierced by a double row of plated wire sutures, six or eight in number, each suture completely going through the disc twice, and forming a loop on the back. The free ends were loosely held while the plate was let into the stomach, and after unfolding it was drawn up against the mucous membrane of the stomach by the double row of sutures (*Fig.* 57).

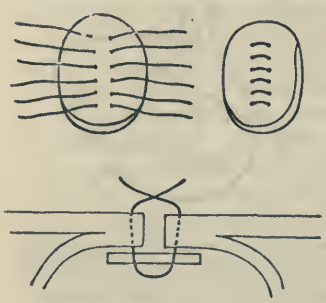


Fig. 57.

A Method of temporarily closing the opening after Gastrotomy.—A valve is attached, says Mr. Edward Cotterell,[4] three inches from the

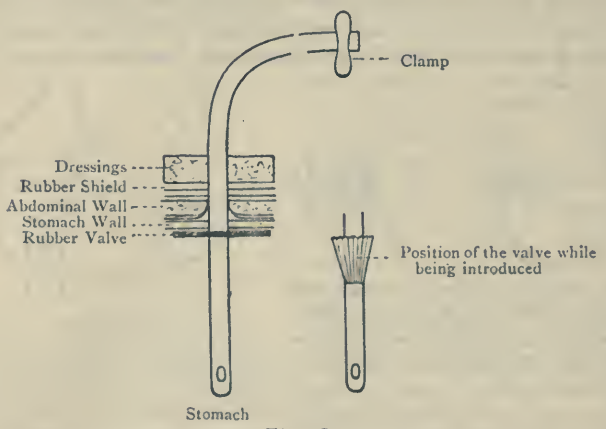
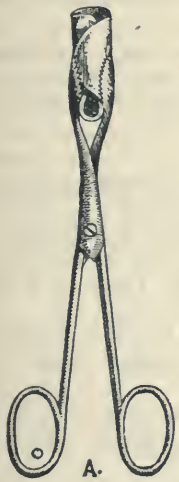


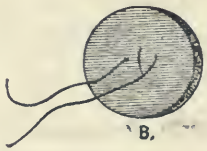
Fig. 58.

end of a Jacques' catheter; the catheter is introduced, the valve closing like an umbrella, and expanding again when in the stomach;

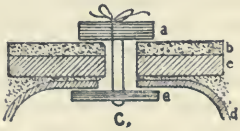
a thick piece of india-rubber is then slipped over the catheter and rests on the skin, being fastened to the catheter by a couple of small safety pins. The end of the catheter is passed through the dressings and clamped. When feeding the patient it is only necessary to unclamp the projecting end of the catheter and inject the nourishment. There will be no escape of stomach contents (see *Fig.* 58).

Method of temporarily closing the opening after Gastrotomy or Enterotomy.—Mr. Harrison Cripps [5] says the difficulty after these operations is keeping the wound clean—the gastric juice or fluid fæces escaping, thus keeping the surface raw and tender for some inches round. He adopts the following plan: The opening in these cases is





A.—Disc rolled up in forceps for Introduction.
B.—Disc with silk thread.
C.—Disc and roll of lint in position.



a.—Roll of Lint.
b.—Skin.
c.—Abdominal Walls.
d.—Wall of Bowel or Stomach.
e.—Disc in Position.

Fig. 59.

of course always small, seldom larger than a sixpenny-piece. A circular disc of sheet india-rubber the thickness of a shilling is cut, the diameter being nearly double that of the orifice to be closed. A thread of No. 4 silk is passed by a needle a little to one side of the centre of the disc, and is passed back again, coming out a little distance from the original puncture and on the same side (*Fig.* 59, *B*). The two ends of the thread are now parallel to one another, and should be left six inches long. The india-rubber disc is now folded into a circular roll and kept in this position by a fine pair of dressing forceps (*Fig.* 59, *A*). The roll is thus introduced lengthways through the orifice into the

interior of the bowel or stomach, and when released from the forceps immediately expands to its original circular form. By drawing up the two strings the disc is lifted up against the mucous surface and in this way effectually stops anything coming through. Indeed, the greater the pressure of the fluid within, the firmer is the disc pressed against the mucous wall. A little roll of lint the thickness of a pencil, and one inch long, stiffened with a pin or a piece of wire down the centre is laid over the external opening between the two strings, which are then tied in a bow across it with just sufficient firmness to press the roll well down on the skin (*Fig.* 59, *C*).

For feeding the patient or obtaining relief all that is necessary is to untie the bow, remove the lint roll, and press with a director the disc into the bowel or stomach.

REFERENCES.—[1] "Revue de chirurgie," June, 1896, and "Brit. Med. Journ.," July 25, 1896; [2] "Lancet," July 4, 1896; [3] "Brit. Med. Journ.," July 4, 1896: [4] Ibid., June 27, 1896; [5] Ibid., June 6, 1896.

STRABISMUS (Treatment of).

G. E. de Schweinitz, M.D.,
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A very thorough paper by Mr. Priestley Smith,[1] of Birmingham, concerning the mechanism of binocular vision and the causes of strabismus, has recently appeared, in which his views as to the methods of treatment are expressed as follows:—

At what Age should a Squint be treated?—The child should be examined with regard to the nature of the squint as early as possible. Before discussing treatment, we want to know:—

(1,) Whether the squint is paralytic, or concomitant; in other words, whether the two eyes move unequally or equally when the child looks in different directions.

(2,) Whether the squinting eye is able or unable to "fix" the object when the fellow eye is covered.

(3,) Whether it presents in its own structure any visible cause of defective vision, such as opacity of the media, or disease of the fundus.

(4,) Whether the onset of the squint was connected with any obvious disturbance of the nervous system.

(5,) Whether it always remains in the same eye, or alternates between the two.

(6,) Lastly, in every case we want to know the refraction of both eyes; this, with the help of atropine and the shadow test, can be determined even in the youngest child, and, if the child be old enough,

the acuteness of vision in each eye when the refractive error is corrected.

These data being obtained, so far as may be possible, we are in a position to speak of treatment and the future probabilities.

Will Glasses cure the Squint?—If there be a considerable hypermetropia in the straight eye, **Glasses** will probably diminish the deviation, whatever be the condition of the deviating eye; but if the latter fail to right itself when the fellow eye is covered, they will not effect a real cure. The more promising cases are those in which the squint alternates between the two eyes; the most promising those in which it appears and disappears periodically. In a case of this kind, if we find that atropine banishes it entirely for the time being, we may be almost sure that glasses will remove it permanently. But the glasses must be correct, neutralising astigmatism, as well as hypermetropia, in both eyes; they must "fit," so that the child looks through them and not over them; and they must be worn constantly from morning till night. Failure frequently depends on lack of perseverance. The parents want a speedy cure; not getting it, they allow the child to lay aside the glasses after a few weeks or months, or fail to renew them when he breaks them. Sometimes they complain, illogically, that "the glasses are no good, for the squint returns the moment they are taken off"; in reality this is the strongest proof of their value. But we must not expect too much from glasses; they can lessen the excess of convergence, and they can sharpen the retinal pictures, but they cannot create the visual perceptions and motor impulses, which are essential to the acquirement of binocular vision.

What else can be done?—The squinting eye, or, rather, the perceptions and impulses which ought to control its movements, can, to some extent at least, be **Educated.** The process will be difficult, or impossible, according to the duration of the previous neglect. The patient must be taught first to perceive the impressions belonging to the squinting eye; then to perceive them simultaneously with those of the fellow eye—that is, to see double; next, to make the effort which is necessary to unite the double images; and, lastly, to form those judgments of distance and perspective, which perfect binocular vision gives. Cures absolutely complete in this last respect, as proved by Hering's drop test, are rare, but not unknown. For this process of teaching several means are at our disposal. We may cause the patient to use the squinting eye exclusively, by covering the other; we may induce him to give it preference, when both are open, by partially disabling the other with atropine; we may teach him to

notice both pictures simultaneously, and ultimately to blend them by means of persistent practice with the stereoscope,[2] differentiating them at first by colored glasses, and approximating them by prisms; we may facilitate the process at any stage, by bringing the eye into better position by means of **Tenotomy.**

When is it Best to Operate?—No operation should be done until the nature of the squint has been thoroughly investigated, and until efforts have been made to minimize the deviation, and to sharpen the visual perceptions by glasses and by regulated practice. When these measures are inapplicable, or have ceased to give progressive benefit, operation is in place, and is hardly contra-indicated by age in either direction; but the younger the child the more important it is to do too little rather than too much. Full correction of a squint by tenotomy in very early life may give over-correction later on. Partial correction by the first tenotomy, an interval with regulated exercise, and then a similar tenotomy on the fellow eye, in case of need, are better practice. Confirmed strabismus often diminishes in degree as time goes on; hence the too common idea that time alone will often cure a squint, and the advice, not seldom given, to "wait and see." For the squinting eye this too often means waiting and not seeing. Time alone may lessen the disfigurement, but will not remove the disability. Binocular vision is not recovered in this way.

For producing *local anæsthesia* for operative work upon the eye and its appendages, **Eucaine** has been very much lauded during the year, and by some operators is preferred to cocaine. A paper by Richard Vollert[3] states that the base is with difficulty soluble in water, but when treated with hydrochloric acid a very soluble salt is formed, which remains anæsthetic when heated, and is also soluble in $\frac{1}{6}$ per cent. sublimate solution. When dropped in the eye in a 5 per cent. solution it produces painful irritation lasting for one or two minutes (longer than cocaine and more irritating). There is produced considerable injection of the conjunctival and ciliary vessels, with first lessened then somewhat heightened tension. Anæsthesia of the cornea and conjunctiva is secured in from two to three minutes, and lasts from eight to twelve minutes, and disappears entirely in fifteen minutes. There is little or no action on the pupils or accommodation. Like cocaine, it impairs the corneal epithelium.

Vinci,[4] on the other hand, claims that it is only the methyl-alcohol preparation that produces irritation, and that the watery solutions are therefore preferable for practical use. It has also been employed in Schleich's method of infiltration anæsthesia with good results.

For those cases in which it is desirable that the pupil shall not

become dilated, or where ischæmia is to be avoided, the drug may be employed: but whether it will ever be as commonly used as cocaine remains to be decided by further clinical investigation and experience.

As a *cycloplegic* for the correction of ametropia **Scopolamine** seems to be rapidly gaining prominence. The recent investigations by Dr. C. A. Oliver[5] with the **Hydrobromate of Scopolamine,** to ascertain its action on the iris and ciliary muscle, have led him to conclude that the early and complete paralysis of the ciliary muscle can be obtained by the single instillation of the $\frac{1}{480}$ of a grain of hydrobromate of scopolamine, and the rapid and full return of the action of the muscle, render this drug in this amount the most efficient and the most valuable cycloplegic that can be used for the proper determination of the total amount of ametropia.

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STYES. *G. E. de Schweinitz, M.D.,* *Clarence A. Veasey, M.D.,* } *Philadelphia.*

TREATMENT.—Dr. John Griffith[1] suggests in the early stage, before suppuration has become established, that the application of a cold solution of **Subacetate of Lead,** alone, or combined with **Rectified Spirit** or **Laudanum,** will oftentimes abort an impending attack. It is far better, he claims, than the use of the galvano- or thermo-cautery needle, or the epilation of an eyelash from the inflamed spot. If the suppurative process is about to begin, he thinks that applications of **Belladonna Fomentations** several times during the day are the best treatment. The fomentations stain the face and produce mydriasis, and he suggests that the latter effect be utilized to test the state of the refraction. After suppuration has ensued the stye should be evacuated by inserting into it a grooved needle to the depth of 3 or 4 millimètres, and afterward making gentle pressure. Following this procedure **Boric Acid Fomentations** should be employed at frequent intervals, and internally **Sulphide of Calcium,** in ½-grain doses, should be administered three or four times a day.

REFERENCE.—[1] "Medical Times," March 21, 1896.

SUMMER DIARRHŒA. (See "Diarrhœa in Infants."

SYCOSIS. *P. G. Unna, M.D., Hamburg.*
Norman Walker, M.D., Edinburgh.

Leistikow[1] recommends a **Zinc Sulphur Paste** with 5 per cent. **Carbolic Acid,** and in severe cases the application of a 20 per cent. to 50 per cent. solution of **Resorcin** in alcohol. In still more rebellious cases, he uses an ointment of **Pyrogallol** or **Chrysarobin.**

Tile[2] cuts the hair short, and applies a 1 per cent. **Sublimate in Alcohol** two or three times a day. He says a cure may be obtained in a few weeks to two months, but the treatment should be continued six weeks after the patient is cured.

REFERENCES.—[1] "Med. Record," Nov. 30, 1896; [2] "Journ. des malad. cut. et syphil.," 1895, No. 1.

SYPHILIS. *P. G. Unna, M.D., Hamburg.*
Norman Walker, M.D., Edinburgh.

There are several papers dealing with the **Serum Treatment** of this disease, from the perusal of which it is evident that the method is one of some value.

Pellizzari[1] reports a case where treatment was commenced on July 5th, and by October 10th (1892), all symptoms had disappeared, and the patient remains up to the present perfectly well.

Pellizzari is satisfied that in every case the manifestations are rendered milder. The best results were obtained when the treatment was begun early. He therefore believes that it confers a sort of immunity on the tissues.

Gilbert and Fournier used the serum from a patient in the late stage, and found the results quite satisfactory. They have also tried to get a protective serum from animals inoculated with the disease, and some patients were treated with their serum. The results were not so satisfactory.

Larrieu[2] believes strongly in abortive treatment. He cauterizes the chancre with **Vienna Paste,** rubs **Mercurial Ointment** into the groins, and gives for thirty-five days 3 to 5 drops of **Tincture of Iodine** every morning.

In the "Medical Record," (Dec. 14th, 1895,) there is a very sensible little note pointing out the error of regarding all diseases in syphilitic subjects as of that nature. The fact that a patient has syphilis, does not exempt him from other disorders.

Petrone[3] has used **Sodium Nitrite** subcutaneously, commencing with ·05, and quickly increasing to ·5. The dose was divided into two portions per diem. He reports very successful results, and as a practical hint mentions that the solution should never be stronger than from 2 to 3 per cent., as otherwise it is painful.

Portalier injects **Calomel** 1 grain, **Cocaine** ½ a grain, **Olive Oil** 15 drops. Abadie uses **Cyanide of Mercury.**

REFERENCES.—[1] "La Clinica moderna.," Feb. 15, 1896; [2] "Revue de therap.," ; [3] "Semaine méd.," 1895, p. 202.

SYPHILIS (in Women). *Theophilus Parvin, M.D., Philadelphia.*

Lutaud[1] states that the general treatment of syphilis in women is the same as that of the disease in man, only the dose must be less than in the latter, *e.g.*, mercury will be given in one-third less quantity.

A woman suffering from mucous patches should at once have **Mercury**, reserving **Potassium** for later symptoms. If mixed treatment is necessary, Lutaud prefers giving **Mercury** and **Potassic Iodide** separately, and not in the same prescription. The local treatment of mucous patches includes general, and **Sitz Baths.** For the former bichloride of mercury and ammonium chloride, of each 15 grains, alcoholic extract of eucalyptus, in 250 litres of water, are directed to be placed in an enamelled bath, and the patient stays in the bath for nearly an hour at a time. If this be impracticable, a sitz bath similarly composed is employed, and the solution is also applied to the diseased parts at night.

In those patients who cannot bear the local application of mercury, a lotion composed of chloral, 1 part, tincture of eucalyptus, 2, and water, 15. Besides, the patches are touched two or three times a week with **Nitrate of Silver.** In papular syphilides, a pomade of benzoated lard, 7½ parts, glycerine of boric acid, 7½, zinc oxide, 1, and white precipitate, 1, repeating its use several times daily after bathing the vulva. At St. Lazare a pencil of **Metallic Zinc** is applied to the syphilides, after cauterization with 1 in 10 of **Silver Nitrate Solution.**

Obstinate syphilitic ulcers require more energetic treatment. Lutaud advises for them the use of **Acid Nitrate of Mercury, Chromic Acid**, or **Zinc Chloride**, preferring the last because of the good results and the smaller amount of pain involved, although he usually precedes its use by a free application of a **Cocaine Solution,** 1 in 10.

After an extensive trial of other remedies for chancroids in women, Dr. Herff[2] expresses a preference for **Liquified Carbolic Acid,** which he has successfully employed in over one hundred cases. His manner of procedure is as follows: After careful disinfection of the genitals with sublimate solution, the ulcers are dried with cotton, and then lightly touched with carbolic acid, any excess being wiped off with cotton. If the ulcers are very large and situated in the vicinity of the clitoris or urethra, previous cocaining is advisable. The after-treatment consists of sitz-baths, and irrigation of carbolic acid or permanganate of

potash solutions. At the end of four or five days the majority of the ulcers have begun to cicatrize, although it may be necessary to cauterize one or more which refuses to heal. If the adjacent lymphatic glands are already affected, this usually subsides spontaneously in a short time. Occasionally rest in bed may be required.

REFERENCES.—[1] "Scalpel," March, 1896; [2] "Monats. f. Geburtsh. and Gynäkol," and "Med. Rec.," Nov. 2, 1895.

TALIPES. *J. W. Springthorpe, M.D., M.R.C.P., Australia.*

Congenital Talipes, Equino Varus.—Mr. W. Kent Hughes has lately described an operation which he has employed for the last three years. It consists in the removal of a wedge from the neck of the astragalus and anterior portion of the os calcis behind the articular surfaces, with complete division of the bones and subsequently of the astragalo-scaphoid capsule—plantar fascia and tendo-Achillis subcutaneously. He claims that the worst cases can be rectified by one operation, and that no joints are interfered with. It is most important that the bones should be completely divided and that the wedge removed should be large enough to allow of the restoration of the foot. The skin incision runs from the upper part of the neck of the astragalus downwards and backwards to the middle of the outer side of the os calcis. In the most severe cases it will be necessary to chisel off the lower end of the external malleolus and perhaps divide the posterior portion of the os calcis obliquely from the outer side backwards and inwards.

After the operation the foot is put up in plaster of Paris. If the immediate result of the operation is not deemed sufficient, the plaster should be taken down on the fourth day and the foot carefully manipulated into a better position. Care must be taken lest pressure sores should be caused by the plaster bandages.

He has performed the operation fourteen times with complete success, except in one case which was operated on with insufficient asepsis. Septic infection occurred, and a large skin slough on the inner side resulted. The case then passed into other hands.

While being a strong advocate of the efficacy of manipulation and treatment by plaster of Paris bandages, if the cases are seen early enough, Mr. Kent Hughes advises that all cases over a year old should be operated on to ensure a perfect result. Double outside irons and night shoes should be worn for at least two years.[1]

Absence of Fibula.—In the case of a boy, aged three and a half years, Mr. W. Kent Hughes opened up the ankle joint, chiselled off the trochlear surface of the astragalus and the posterior portion of the os calcis, then the cartilage was removed from the lower end of

the tibia and the surface prepared for the os calcis and astragalus. The foot was then brought into an extreme equinus position, the ligaments requiring thorough division. A sound union took place and a gain of three and a half inches in length was obtained. The patient was fitted with a cork sole four inches in depth, posteriorly thinning down to half an inch anteriorly. Instead of walking upon the internal malleolus with four inches shortening, the patient walked upon the ball of the foot with only half an inch shortening.[2] (See also "Flat-Foot.")

REFERENCES.—[1] "Intercolonial Quarterly Journal of Australasia," March, 1896; [2] "Austral. Med. Gazette," Aug., 1896.

TATTOO MARKS. *P. G. Unna, M.D., Hamburg.*
Norman Walker, M.D., Edinburgh.

Brault says that these can be removed by the re-tattooing of the part with a solution of 30 parts of **Zinc Chloride** in 40 of sterilized water. The parts must previously be made aseptic.

TENDONS (Surgery of). *Priestley Leech, M.D., F.R.C.S.*

Dislocation of Tendon.—Mr. Walsham[1] draws attention to the dislocation of the peroneus longus tendon, and has performed an operation to keep the tendon in place.

Mr. Allen[2] gives notes of another case in which a cure was effected by replacing the tendon, and firmly strapping the ankle; the strapping was kept on for three weeks, the patient going about on crutches; an elastic anklet was then worn for some time.

The patient can now walk, and run, without any inconvenience.

Rupture of Tendon.—Rupture of the quadriceps extensor tendon is somewhat rare, and its treatment by ordinary means is not always satisfactory. Lister, in 1878, treated a case by an open incision and suture of the divided ends of the ruptured tendon. Since that time other cases have been subjected to the same treatment.

Buchanan[3] gives a list of thirty-six cases of this injury, which in addition to sixty-one cases collected by Maydl, of Vienna, and twenty-three cases collected by Bull, of New York, makes a total of one hundred and twenty cases. Bull came to a conclusion, from a study of his own and Maydl's cases, that without an operation an imperfect result is obtained in half the cases. Buchanan comes to the same conclusion from a study of his thirty-six cases.

The data furnished in the published cases are not sufficient for accurate conclusions to be drawn, as to the value of different methods of treatment. Buchanan thinks the following particulars are desirable: Whether only the central tendon alone is torn away, or whether the

lateral expansions of the vasti are also ruptured ; the position of the rupture, whether close to the patella, or higher ; the amount of separation ; the exact method of treatment, and the duration of its various stages ; the length of time before passive motion was employed ; the result as to union of the tendon ; the amount of permanent separation ; the ultimate mobility of the joint ; the final strength of the limb, and the length of time which elapsed from the date of injury until the last observation of the case. A case in which he operated with a good result is described.

Mc Burney[4] showed a patient who had ruptured both tendons at different times ; both were operated on, with a good result. He had great faith in the operation, having treated a number of cases with excellent results. The freedom from adhesions was attributed to the use of simple sterile salt solution, in washing the joint free from blood clots, and to the early passive motions made.

In the discussion which followed, Dr. Mc. Burney said a distinction should be drawn between different cases. Where the central portion alone of the tendon was ruptured, a good result could be obtained without an operation, but where there was separation clear across the joint, including the lateral as well as the central portions, operation was indicated.

This injury is also the subject of an exhaustive paper, by Dr. J. B. Walker, of New York[5] ; a good bibliography of cases is appended, and the conclusions he comes to are as follows :—

(1,) The patella is to be considered as a sesamoid bone, and the ligamentum patellæ as the proper tendon of insertion of the muscle.

(2,) The rupture occurs about equally above and below the patella, is generally complete, and causes an entire loss of function. In a small number of cases, the rupture is incomplete, and then loss of function may not follow.

(3,) It occurs most frequently between the ages of forty and fifty, and is due to indirect violence, as slipping, or falling.

(4,) The seat of rupture is most often at or near the insertion of the tendon, on the patella, or on the tuberosity of the tibia. The patella becomes more freely moveable, and a depression is found in recent cases between the separated structures. The amount of separation increases when the leg is flexed, and decreases when it is extended ; it is generaliy less than 1½ inches.

(5,) Results of mechanical treatment of rupture of the quadriceps give 70 per cent. of complete recoveries ; of these 18 per cent. recovered in three months ; 31 per cent. in six months ; and 50 per cent. in one year. In cases of rupture of the ligamentum patellæ, 75 per cent.

made a complete recovery, and of these, 7 per cent. recovered in three months, 33 per cent. in six months, and 63 per cent. in one year.

(6,) Under operation, an earlier recovery followed. In the case of rupture of the quadriceps, 90 per cent. recovered ; of these, 56 per cent. recovered within three months, and 100 per cent. in six months. In the case of the ligamentum patellæ, 80 per cent recovered ; of these, 50 per cent. recovered in three months, and 100 per cent. in six months.

(7,) In recent cases, where there is not much effusion, and the joint is apparently not opened, where the separated ends can be approximated and retained by suitably adjusted pads, the mechanical treatment may be carefully considered. This method, in the hands of an intelligent practitioner, may be expected to bring about a complete recovery in the larger number of cases. From nine to twelve months will be required to re-establish fully the normal functions.

(8,) A too prolonged fixation in bed is unfavourable to an early recovery, therefore early massage and passive motion are strongly advised.

(9,) The skilled aseptic surgeon, who primarily resorts to operation in suitable cases, may quite reasonably hope to obtain a better result in a larger number of cases, and save his patient three to six months' time. Catgut, kangaroo tendon, or silkworm gut should be used, and when there is much effusion, drainage should also be employed.

(10,) When the separation is greater than 1½ inches, or when the case has not recovered under the mechanical treatment, operation is indicated.

Tendon Grafting in Infantile Paralysis.—A successful case of making a healthy muscle perform the function of a paralysed one, was related to the New York State Medical Association, by Dr. Milliken.[6]

The patient was a boy nine years of age, and the paralysis mainly affected the tibialis anticus, the flexion of the foot being carried out by the action of the ext. proprius pollicis, and longus digitorum and the perineus tertius. The sheath of the tendons was opened just below the annular ligament ; an inch flap was taken from the tendon of the tibialis anticus, and the extensor proprius pollicis, and the two flaps were united by three interrupted sutures of kangaroo tendon. The outer sheath of the extensor pollicis was then sewn to the inner sheath of the tibialis anticus, to prevent the newly united tendons from becoming adherent to the overlying structures. The deformity was corrected manually, and a plaster of Paris dressing applied. Passive motion was commenced at the tenth day. After six weeks, the plaster was removed, and a light brace applied. The boy could abduct the foot to the normal degree, and had become an expert in roller skating.

REFERENCES.—[1] "Brit. Med. Journ.," Nov. 2, 1895; [2] Ibid., Nov. 9, 1895; [3] "Med. Record," Nov. 2, 1895; [4] "Annals of Surg." Oct., 1895, p. 507; [5] "Amer. Journ. of Med. Sci.," June, 1896; [6] "New York Med. Journ.," Nov. 2, 1895.

TETANUS. *Græme M. Hammond, M.D., New York.*

Dr. Reginald Hartley[1] reports an interesting case of tetanus successfully treated by a combination of **Tetanus Antitoxin** and **Chloral Hydrate.** The patient, a man forty-four years old, was injured by falling upon a horse-shoe nail, which penetrated his arm in the region of the ulnar nerve. Symptoms of tetanus were observed fourteen days after the injury. Injections of antitoxin were given on an average twice a day for four or five days; 1 gramme of the drug was dissolved in 90 minims of distilled water. It was then injected, by means of a sterilized syringe, deeply into the muscles of the back. After the first injection, great pain followed each succeeding dose, and the surrounding tissue looked red, swollen, and inflamed. The chloral was given in 40-grain doses twice a day at first, but later, as the patient improved, only one dose a day was given. The patient gradually recovered, and in about a month was almost well.

Kanthack,[2] in reviewing the subject of the efficacy of antitoxin in the treatment of tetanus, points out that the seriousness of the disease depends, among other things, upon the rapidity of the onset, the acuteness of the case, and the period of incubation—*i.e.*, the shorter the incubation, the more serious the outlook. He concludes, from a study of the recorded cases, that the serum treatment has not actually changed the prognosis in acute and serious cases. In the milder cases it seems to lessen the spasms, the pain, and the distress, and, fortunately, it has reduced the mortality, but to what extent cannot be told until a greater number of cases have been reported.

Turner and Cheatle[3] report the case of a boy six years of age, who was brought to the West London Hospital suffering from tetanus, which developed about fourteen days after he had fallen upon a piece of barbed wire, producing a lacerating wound on the ball of the left thumb.

Gramme doses of the antitoxin were injected into the abdominal wall once a day for two consecutive days, and on the evening of the second day half a gramme additional was injected. Improvement was noticeable from the first. After the third day no further spasms occurred, but as there was considerable abdominal spasticity, another injection of a gramme was given on the sixth day. On the nineteenth day the patient was allowed to leave his bed.

Farrant[4] reports a case of a man who died on the fifteenth day after the onset of the symptoms, although the antitoxin was promptly

administered, but the case was a very acute one, and the subject a man addicted to alcoholic excesses. The symptoms supervened four days after the injury, which was caused by a horse kicking him in the face. The spasms were extremely severe. The man died, though the severity of the spasms was mitigated from the time the antitoxin was used.

Zimmermann[5] describes three cases of tetanus, two of which were fatal, and the other recovered. In the latter case antitoxin was used. In the first case tetanus developed on the first day, and the patient died on the day following. The symptoms in the second case appeared on the twelfth day after the injury, and terminated fatally on the nineteenth day. In the third case the disease did not appear until seventeen days after the wound was inflicted. At first physostigma, morphine, and chloral controlled the paroxysms effectually, but six days later the patient became rapidly worse; 25 cubic centimêtres of antitoxin were injected. This dose was shortly repeated. The following day smaller doses were given, and some days later a few more injections were necessary. The patient gradually recovered.

On the other hand Dr. Trevelyan[6] reports a case in which the antitoxin serum (Roux) was used with absolutely no success whatever; and the author states that this is the third case in which he has observed the use of the remedy, and in all it did not appear to have the slightest effect upon the disease.

REFERENCES.—[1] "Lancet," Dec. 7, 1895; [2] "Therap. Gaz.," July, 1895; [3] "Lancet," Dec. 7, 1895; [4] Ibid., Dec. 7, 1895; [5] "Therap. Gaz.," Nov. 15, 1895; [6] "Amer. Journ. Med. Sci.," May, 1896.

TONGUE (Cancer of). *Priestley Leech, M.D., F.R.C.S.*

Mr. Watson Cheyne[1] says that the principles of treatment of cancer of the tongue are the same as those of cancer of the breast; the removal of the whole of the muscle, and of the nearest lymphatic glands is imperative. Thorough operations in this disease are justified by the great frequency of recurrence, varying from 61 per cent. in Kocher's statistics, to 89 per cent. in Winiwarter's.

Taking mild and severe cases together, the mortality may be estimated at from 15 to 20 per cent. The limits of the operation for cure in cases of disease of the tongue are: very extensive infiltration of the tongue muscles, especially downwards towards the hyoid bone; extensive affection of the jaw in addition to the tongue; extension to the upper part of the larynx and involvement of the carotid artery and the vagus nerve in the large glandular mass. (For his remarks on removal of the glands and after treatment see "Pharynx," p. 446.)

REFERENCE.—[1] "Lancet," vol. i., 1896, and "Brit. Med. Journ.," Feb. 22, 1896.

TONSIL (Hypertrophy of Lingual).

P. Watson Williams, M.D. Lond. (Bristol).

F. R. Clark[1] reports seven cases observed in Gibbs' clinic. He remarks that while it is doubtless true, as claimed by McBride, that acute inflammation of the lingual tonsil may arise and pass away unnoticed, yet Bosworth is no less correct in asserting that the conditions which the physician is called upon to treat, is a chronic one and has been so from the start. Hypertrophy of the lingual tonsil is a disease of adult life, the average age being eighteen to thirty-five, though McBride reports a case in a child of seven. More cases are reported in women than in men, but it must be borne in mind that women are more prone than men to notice and exaggerate such conditions. Exposure to cold and wet, prolonged use of the voice in speaking and singing and, possibly, the swallowing of very hot food or liquids, may influence unfavourably the progress of the trouble. Clark's experience has not corroborated the assertion that public singers are particularly subject to this disorder. The acute infectious diseases, especially diphtheria and scarlet fever, are potent etiological factors, as are inflammations of the adjoining adenoid masses. Rheumatism and the scrofulous diathesis, doubtless, bear the same relation to this structure as do kindred structures elsewhere.

Payson Clark thinks that in some cases the process is tuberculous. In the lacunar variety the same micro-organisms are present, and, doubtless, active, which are responsible for follicular tonsillitis. This process is similar in all of these associated adenoid masses. McBride believes that mouth-breathing may cause this trouble. General debility and hysteria undoubtedly aggravate the condition, as do also overwork, nerve-tire, dyspepsia, and all conditions that promote congestion and hyperæmia.

The most common symptoms complained of are a sensation of a foreign body at the base of the tongue, frequent efforts to swallow ("empty swallowing"), a dry irritative cough, and often a cutting or sticking sensation, which may also radiate to the sides of the throat or the ear. When the growth completely fills the space between the tongue and the epiglottis and presses upon the latter, dyspnœa and even spasm of the glottis may result. Incarceration of the epiglottis in the adenoid mass has been reported. Voice-tire is not an uncommon symptom, especially in public speakers and singers, and in those who are suffering from general debility. Shortness of breath with asthmatic attacks, a sensation of pressure in the neck and of choking, and even the "globus hystericus" have been mentioned as occasional symptoms. Bleeding is sometimes observed from venous

leakage, or the taste of blood in the throat on waking may be the only indication of the hæmorrhage.

In the laryngoscopic mirror the lobulated appearance characteristic of lymphoid tissue is evident. At times this may appear blanched and firm as if from fibroid change; more often it is soft, swollen and succulent. In some cases real and tortuous vessels stud the surface, constituting a condition of varix and accounting for any hæmorrhage which may be present. In the follicular form the exudate accumulates in punctate or larger masses as in lacunar inflammations elsewhere.

The diagnosis may be made by the symptoms already enumerated, but especially by a careful laryngoscopical examination.

TREATMENT.—The course of the disorder is chronic and often stubborn. **Cleansing, Antiseptic Sprays**, followed by applications of a solution in **Glycerine of Iodine** and **Potassium Iodide**, will in some cases suffice to effect resorption of the redundant tissue. In more stubborn cases Gibb has secured good results from **Chromic Acid** fused to a bead on a probe and carefully applied to small areas after cocainization. Ralph W. Seiss has also used this agent satisfactorily. The applications must be made under full illumination and under the guidance of the mirror. With these precautions the severe and lasting pain, mentioned by Bosworth, is avoided and the dangers which have deterred him from using chromic acid are minimized. In the use of iodine great care must be taken to protect the larynx, as the insufflation of that irritant may produce dangerous spasm. Gibb also uses the **Galvano-Cautery** in stubborn cases with happy results. Ruault employs this agent exclusively. The **Cold Wire Snare** is useful in removing large and prominent masses.

Peyre-Porcher reports a case in which he shaved off the redundant tissue with a tonsillotome. After operation, the food should be cool, bland, and unirritating, without salt, pepper, or other condiment. Lozenges of gum arabic, marshmallow, or peppermint, will be grateful. In many cases, the general health will require attention.

REFERENCE.—[1] "Phil. Polyclinic," March 28, 1896.

TORTICOLLIS. *Priestley Leech, M.D., F.R.C.S.*

Dr. Cox[1] recommends the following method as one which he used, and one which shortened the usual after-treatment. The open operation is better, safer, and more exact than any subcutaneous treatment can be. He used a short longitudinal incision about two inches above the clavicle. A temporary heavy dressing, with a rubber splint moulded to the proper shape, was applied, so as to get an approximate oblitera-

tion of the deformity, and recovery from anæsthesia waited for. When this had occurred the rubber splint and most of the dressing was removed, and a new dressing, with a plaster of Paris splint, applied, with the head tilted as much as possible away from the side of the lesion, with the face turned towards that side, and the chin pointing slightly downwards. This position separates to the fullest possible extent the mastoid process and the sterno-clavicular articulation, and its maintenance is, of course, of great importance during the healing process.

In ten days the dressing was changed, and a lighter plaster splint applied for another week; at the end of this period all dressings were discarded, and the patient discharged, to return for observation and manipulation. After a month the patient was lost sight of, but when seen again in a year and a half the result was very good.

Dr. Cox thinks that a careful regard for the position of the head in such cases will obviate a good deal of subsequent orthopædic treatment by apparatus.

REFERENCE.—[1] "Annals of Surgery," March, 1896.

Græme M. Hammond, M.D., New York.

At a meeting of the Vienna Medical Society, Weiss [1] exhibited a patient who had suffered for a short time with spasm of the right sterno-mastoid muscle and the rotators of the head and vertebral column. The chin was turned toward the left and the head to the right, the occiput almost touching the right shoulder. Arsenic, bromine, and Faradization had been tried unsuccessfully, and nerve stretching had been performed without amelioration. Dr. Weiss then injected a solution of **Curare** into the neck. The solution was made by dissolving 0·15 grms. of curare in 10 grms. of water. At first, half a Pravaz syringeful should be injected, but the amount is to be gradually increased until tremulousness is induced.

REFERENCE.—[1] "Amer. Med. and Surg. Bul.," Feb., 1896.

TUBERCULOSIS. *Henry Dwight Chapin, M.D., New York.*

Dr. R. Blache[1] reports upon the **Fresh-air Cure** in the treatment of pulmonary tuberculosis at the Hospital of Ormesson. The idea of this undertaking and the end pursued is there to hospitalise, in conditions of air and hygiene as perfect as possible, children from three to sixteen years of age manifestly attacked with pulmonary tuberculosis, in order to observe and to study the clinical results of fresh air seconded by hygiene and abundant nourishment. Ormesson is situated in the remotest part of the plateau of Champigny, at an elevation above

the sea of 94 metres (308·39 feet), and overlooking the valley of the Marne. The ground on which the hospital is built has 25,000 metres (6 acres) of surface, and forms the most elevated part of the hill facing toward the south and south-west. The buildings serving as dormitories are two immense wooden pavilions, the capacity of each of which is not less than 2,880 metres (101,710 cubic feet) of air constantly renewed by perforated windows. In order to leave to the air cure its full importance and its full value, no special medication is used at Ormesson excepting cod-liver oil during the very cold weather. Twice a week, unless there is a contra-indication recognized by the physician, each patient is bathed, thoroughly soaked, then vigorously rubbed in order to ensure a complete reaction of the skin. Very good results are claimed for this treatment.

Dr. Scarpa[2] has treated a series of cases of pulmonary phthisis with **Ichthyol.** He employed the drug in the purest possible state, dissolved in the proportion of ⅓ in distilled water or any other suitable vehicle. Of this solution he gave from 20 to 180 or 200 drops, dissolved in water, in the course of the day. The remedy was in all cases well borne. No other treatment was employed beyond attention to the hygienic environment and feeding up. The author does not attempt to decide whether the ichthyol acts only by improving nutrition, or also by direct action on the lesions, or by neutralizing the toxins produced by micro-organisms. He believes that ichthyol presents great advantages over guaiacol in the treatment of tuberculosis.

Dr. Broas[3] has treated twenty-nine children affected with scrofulous adenitis by means of **Thiosinamin** injections. The drug was employed in 2½ per cent. alcoholic solution, about 3 drops being used for each injection. These injections were repeated twice a week beneath the skin in the interscapular region, alternately on the right and left sides. The injections seemed to increase the general strength and appetite, as well as have a favourable effect on the glands.

REFERENCES.—[1] "Translation in Arch. Ped.," Sept., 1896; [2] "Brit. Med. Journ.," No. 1787, 1896; [3] "Rev. inter. de med. et de chir. prat.," May 25, 1895.

Synopsis.—(Vol. 1896, p. 577.) **Tuberculin, Antiphthisin,** adult dose $\frac{1}{10}$ of 1 c.c., increased by $\frac{1}{10}$ per diem until 1 c.c. is given. **Yeast Nuclein** has proved satisfactory in urinary tuberculosis. Coley advocates **Guaiacol Carbonate; Salol** for diarrhœa; **Morrhuol Creasoté; Terebene; Menthol,** 20%, with **Guaiacol,** 3%, for intra-laryngeal use. Simon advises **Creasote,** with **Iodoform** and **Salol,** for rectal injections. **Peptomangan** for anæmia of phthisis. For dysphagia Lermoyz advises **Insufflation,** with: ℞ Morph. Hydrochlor., Sacch. Lac., āā gr. 20; Gum Arab., gr. 15. M. ft. pulv. *Sig.*—½ gr. to be used at each insufflation. For night sweats **Chloralose,** 9 gr., repeated in half hour, and twice at the same interval if

necessary. **Agaricin**, gr. $\frac{1}{12}$, at bedtime, and again in four or five hours. For infantile tuberculosis **Sodium Fluoride**, $\frac{1}{150}$ to $\frac{1}{75}$ gr. daily. **Cantharidin** (p. 30). **Ichthyol**, 1 in 3 solution, 20 to 200 drops taken daily well diluted in 10 to 15 ounces of water (p. 47).

TUBERCULOSIS OF LARYNX. (See "Larynx, Tuberculous Disease of.")

TUMOUR OF BRAIN. (See "Brain.")

TYPHOID FEVER. *F. de Havilland Hall, M.D., F.R.C.P.*

Some interesting investigations on the vitality of typhoid bacilli inoculated into oysters have been carried out by Mr. Charles Foote.[1] It appears that during the first fortnight following the introduction of the typhoid bacilli, undoubted multiplication of these microbes took place, but after that time had elapsed a steady decline in numbers was observed. The presence of typhoid bacilli within the oyster was, however, still demonstrable even thirty days after they were first introduced, and they were moreover, observed in the stomach of the oyster, where they remained unimpaired in a vital condition. In some other experiments the water in which the oysters were immersed was also inoculated with typhoid bacilli, and it was actually found that they lived longer within the body of the oyster than in the water in which the latter was preserved. These investigations materially assist in justifying the hypothesis as to the possible contraction of typhoid through the consumption of oysters.

Freund and Levy[2] have demonstrated the presence of typhoid bacilli in the fœtus of a woman who had typhoid fever and aborted in the beginning of defervescence. According to Uffelmann[3] typhoid bacilli retain their vitality in a dry state for many days; in moist media it is very probable that the microbes would retain their power of growth still longer. The same investigator proves that typhoid bacilli may be carried by the air as well as by the clothing, and that they are thus capable of infecting milk, water, and various foodstuffs.

Typhoid fever is extremely rare in children under the age of three years.[4] The condition which is sometimes mistaken for typhoid fever is catarrhal pneumonia, a disease in which the physical signs are often obscure. Influenza with slowly developing pneumonia, the pyrexia of gastro-intestinal disease, of pleurisy, and of tuberculosis may also simulate typhoid fever in children.

Dr. Russell[5] has drawn attention to the occasional occurrence during the course of typhoid and typhus fevers of an erythematous rash which resembles that of scarlet fever, but which is not followed by desquamation or the other sequelæ of that disease. It is well,

therefore, for the practitioner not to be too hasty in giving an opinion as to the character of such an eruption, which appears in no way to affect the prognosis. Murchison alludes to the appearance of herpes and sometimes of bullæ during the course of these fevers. He also mentions urticaria as not uncommon before the crisis or in early convalescence in typhus fever. Young patients were the ones in whom the rashes most commonly occurred.

Devic[6] has met with buccal ulceration in about one-sixth of the cases of typhoid fever. The ulceration occurs most frequently on the anterior pillars of the fauces; it is also seen on the lateral aspect of the tongue, the anterior surface of the soft palate, and lastly the tip of the tongue, in order of frequency. The ulceration is always superficial, oval, or round in shape, with regular margins, which are not undermined. As a rule there are no symptoms, the ulceration is therefore only found when specially looked for. According to Tripier these ulcers run an absolutely parallel course with the intestinal lesion, hence they are a guide to the condition of the intestines. They are best treated by washing out the mouth with a weak solution of **Permanganate of Potassium** or **Boric Acid.**

The promotion of intestinal antisepsis has long been aimed at, and many drugs have been recommended for the purpose—amongst others **Salol**[7] in 8-grain doses every six or eight hours has been highly recommended.

Quill[8] has had excellent results from the following combination :—

℞ Acid. Carbol. purissimi		Tinct. Cardamomi Co.	ʒss
· (Calvert's)	♏xxxvj	Syr. Hemidesmi	ʒij
Spt. Chloroformi	ʒij	Aq. Chloroformi ad	ʒxij

Fiat. mist. Sig.—One ounce with an equal quantity of iced water to be given every second or third hour immediately after food.

The author was led to combine **Chloroform** with carbolic acid in consequence of certain experiments made by Werner of St. Petersburgh, in 1890, which showed that a ½ per cent. solution of chloroform had a rapidly fatal effect on the enteric bacillus.

Dr. Simon prefers **Turpentine**; he orders 15 drops to be given in mucilage, with the addition of **Liq. Potassæ** ♏j every four hours. He claims for turpentine that it is not only a good antiseptic but it is a cardiac tonic, and tends to arrest hæmorrhage. The antiseptic treatment of typhoid fever has been discredited by those who have looked on the so-called antiseptic remedies as germicidal. Dr. Simon rightly points out that "the object of their administration is not to kill the typhoid bacillus, but only to render its influence less hurtful by improving the condition of the bowel, and by diminishing the

risk of a secondary fever from putrefaction and development of ptomaines."

Dr. Burney Yeo's[9] **Quinine and Chlorine Mixture** has been much lauded by many practitioners. It is made in the following manner: "Into a twelve-ounce bottle put 30 grains of potassic chlorate, and pour on this 60 m of strong HCl. A greenish-yellow gas is at once liberated. Close the bottle with a cork and agitate the mixture gently until the bottle is filled with gas; then pour water into the bottle little by little, closing the bottle and shaking well at each addition, until the bottle is half filled. Add to this mixture from 24 to 36 grains of quinine, and then fill the bottle with water. The dose is an ounce, administered, according to the severity of the case, every hour to every four hours."

Dr. Tyson's[10] remarks of the **Cold Bath** treatment of typhoid fever are so much to the point that they deserve to be quoted in full :—

"My own plan, pursued for the most part in the Hospital of the University of Pennsylvania, has been as follows: Until recently I have been in the habit of waiting for the diagnosis, but of late have become satisfied that time is unnecessarily lost and the full advantage of the method not attained by such a course, while no possible harm can result to the patient with fever who may, by mistake as to diagnosis, have been treated for a short time with baths.

"It has been our practice to have in the wards a movable tub, which is wheeled to the bedside and kept there, unless needed for another patient, during the treatment of the illness. It is filled with water at a temperature of 70° F., as a convenient figure, and sufficiently near the 68° F. laid down by Brand himself. In the summer season the temperature of the water from the city tap is often a good deal higher than this, and it has to be cooled down by means of ice. The temperature of the patient is taken on admission, and whenever it reaches 102·2° F. he is put into the tub. If moist, his body is dried off. If he has not recently emptied his bladder, he is requested to do so. He is then divested of all clothing, but a sheet is thrown loose around him, and if the bath tub is made of the right height (it is generally made too high), he has simply to sit upon the edge of the bed and swing his legs into it; then, with very slight assistance from the nurse, the rest of the body is moved into the water. It very frequently happens that the patient is quite strong enough to make all the required effort himself, and is in no way injured by it. Thus submerged, a compress wet with ice-water is placed upon his head, or, less frequently in our practice, water at a lower temperature is poured upon the head and shoulders. The patient remains in the bath fifteen minutes, during which time he is thoroughly rubbed, if

possible, by two attendants, and encouraged also to rub himself everywhere except the abdomen, which is left untouched for evident reasons. While in the bath a little wine or whiskey and water is sipped, but I do not consider this an essential part of the treatment. At the end of the fifteen minutes he is removed from the bath and dried.

"While in the bath the patient shivers, his teeth chatter, and he has the appearance often of being very uncomfortable; indeed, probably is so; but the attendants must not allow themselves to be disturbed by this and induced to change the course directed or remove him from the bath, but to encourage him by word and manner. Does it ever happen that it is necessary to take him from the bath? In very rare instances, where there is a general asphyxiated appearance of the skin, and there is an evident feebleness and great frequency of the pulse, it may be, although this is such a rare circumstance that I do not remember ever to have found it necessary in my practice. If it should happen after the patient is removed that there is delay in securing a reaction, artificial heat—hot-water bottles or cans—may be applied to the extremities until warmth is restored.

"The patient being removed from the bath at the end of fifteen minutes, in three-quarters of an hour—that is one hour after the temperature which determined the bath was originally taken—it is again taken, and if the thermometer reads 102·2° F. the bath is repeated. If the temperature is 102° F., it is again taken in half an hour; if below 102° and above 101° F., it is taken in an hour; if below 101° and above 100° F., it is taken in two hours; if below 100° F., it is not taken again for three hours; but whenever it registers 102·2° F. the bath is repeated, and so on until the temperature is permanently below the bath-point.

"Whatever may be the difficulty in the general adoption of the treatment, none has ever been suggested which has stood the test of trial so long and so satisfactorily, and of all methods it alone has passed the stage of primary laudation. The number of baths required varies greatly. The smallest number has been four, the largest ninety-one, and some cases did not reach the temperature which is the condition of the bath—102·2° F. These cases have invariably terminated favourably without any other treatment than suitable diet and good nursing. In severe cases with high fever, on the other hand, the baths have to be very much more frequent, and if they fail to bring down the temperature, the period of immersion may be somewhat prolonged, but never beyond twenty minutes. I do not adopt the practice, recommended by some, of keeping the patient in until the

temperature is down to a given point. In the first place it is not easy to take the temperature in the bath, while it often happens that there is a decided fall after the patient is removed."

Another method of reducing temperature consists in the application of cold to the abdomen by means of **Ice-bags** over the lower coil of the ileum and the beginning of the colon, for the longest periods, and with the shortest intervals consistent with safety; the object being to obtain as low and constant a temperature near the lesions and the infecting process. The continuous use of the ice bags causes congestion, and in time sloughing of the skin, hence the necessity for regulated intermissions. Dr. Downes[11] of Philadelphia has come to the conclusion that applications of an hour and a half, with half-hour intermissions, is the best rule to follow.

As the effect desired is the lowest possible temperature, while the ice is on the abdomen the water should be as often removed from the bag as the ice melts; otherwise the resulting fluid becomes a medium between the heat of the body and the ice, with loss of cold. The rapidity of melting and the necessity of renewal of ice varies with the height of the fever. When the temperature is near 102° or less, a bag completely filled may not need re-filling for an hour and a half, whereas with the temperature at 104° the bag may need filling every half-hour. To lose no time, freshly filled bags should be ready.

The ice-bags are discontinued in all cases when a temperature of 99° or under is reached. In Dr. Downes' cases the number of days ice was applied varied from two to twenty-four, including recrudescence.

These remarks on the reduction of temperature in typhoid fever will be suitably ended by quoting the conclusions at which Dr. Hare[12] of Philadelphia has arrived :—

"First: Moderate fever has been proved to be in itself harmless. Hyperpyrexia is of itself harmful.

Second: Moderate fever has a useful function to perform in the body in the presence of an infection.

Third: Cold baths do good, not by the mere abstraction of heat, but by increasing metabolism and the rapidity of all vital processes.

Fourth: The use of antipyretic drugs is contra-indicated in all infectious diseases."

REFERENCES.—[1] "Indian Lancet," Mar. 1, 1896; [2] "Amer. Journ. Med. Sci.," Feb., 1896; [3] "Indian Lancet," Jan. 1, 1896; [4] "Med. Record," Feb. 29, 1896; [5] "Lancet," Mar. 21, 1896; [6] "Brit. Med. Journ.," Mar. 21, 1896; [7] "Medical Age," Feb. 25, 1896; [8] "Therap. Gaz.," Nov. 15, 1895; [9] "Brit. Med. Journ.," Mar. 21, 1896; [10] "Therap. Gaz.," July 15, 1895; [11] Ibid., Mar. 15, 1896; [12] Ibid., Feb. 15, 1896.

TYPHOID FEVER (Australian). *David Hardie, M.D., Brisbane.*

This disease occurs in Australia mainly during the summer months, and sometimes appears in the form of an epidemic. The prevalence of typhoid fever has been distinctly shown to be intimately associated with the atmospheric conditions that obtain not only at the time of its occurrence, but for many months previously; a comparatively high temperature and continued dry weather during the winter and spring months being almost certainly followed, other things being equal, by an increased number of cases the following summer. During a rainy season, on the other hand, comparatively few cases are met with. The reasons are obvious. Tropical rain is an excellent scavenger, and brings a more wholesome water supply amongst a population that drink largely of tank water.

In 1887 the **Cold Bath Treatment** was introduced in the Brisbane Hospital by Dr. Hare, who has ever since been an enthusiastic advocate for its employment. The following table, taken from a paper by Dr. Hare in the "Australasian Medical Gazette," June, 1896, speaks for itself.

PERIODS.	NO. OF CASES OF TYPHOID.	DEATHS.	PERCENTAGE MORTALITY.
FIRST—			
Expectancy .. .. .. (May 15th, 1882, to Dec. 31st, 1886)	1828	271	14·82
SECOND—			
Incomplete bathing .. .. (Jan. 1st, 1887, to June 30th, 1887)	171	21	12·28
THIRD—			
Strict bathing .. .. .. (July 1st, 1887, to Dec. 31st, 1889)	1002	71	7·08

Since 1889 the treatment has been followed up by Dr. Jackson, and with equally satisfactory results.

TYPHOID FEVER (Bone Lesions following). (See "Bone," page 142.)

ULCER OF BLADDER. (See "Bladder.")

ULCERS OF THE CORNEA. *G. E. de Schweinitz, M.D., Clarence A. Veasey, M.D., Philadelphia.*

For the treatment of the various forms of corneal ulceration almost every known drug possessing germicidal or antiseptic properties has at some time or other been employed. One of the recent additions to

the already long list of such drugs to be used in these cases is **Formalin.** It is used in the strength of 1 to 2000, and Davidson[1] asserts that when employed only three or four times a day in cases of *hypopyon ulcers* it seems of little benefit, but when applied freely every hour nothing acts so effectually. It is also claimed that the pain which is frequently severe in these cases is speedily relieved by the above solution. Burnett[2] has also obtained excellent results from its use, and advises, in addition to the employment of solutions of the above strength for irrigating purposes, the touching of the ulcer itself once daily with a solution as strong as 1 to 200, or even 1 to 100.

Phenate of Mercury is recommended by Galezowski,[3] especially in *herpetic* ulcerations.

As a wash the following solution is employed :—

Distilled water, 100 grammes | Phenate of Mercury, 10 to 47 milligrammes.

As an ointment :—

Lanolin, 10 grammes | Phenate of Mercury, 5 to 10 centigrammes.

These preparations should not be employed, however, until the congestion has been reduced by means of mydriatics or steam douches, and should be discontinued if not well borne.

Airol, a kind of iodized dermatol, has been successfully employed by Gallemaertz,[4] in the treatment of many cases of corneal ulcers, some of them being very severe. At first he dusted the airol over the surface of the eye, but it caused so much pain that the method had to be abandoned. He then contented himself with touching the ulcerated spot with a bit of cotton that had been dipped into the powder, previously applying cocaine if much of the airol had to be employed, and claims to have obtained excellent results, greatly preferring the airol to iodoform.

Topical applications of the **Tincture of Iodine** to the ulcerated spot is a method of treatment that receives additional testimony from Van den Bergh,[5] the ulcers cicatrizing quickly and with a minimum amount of opacity. The application is usually followed by the installation of a solution of atropine and the use of a pressure bandage.

Norsa[6] speaks highly of a 1 to 3 per cent. ointment of **Balsam of Peru** or **Balsam of Tolu.** He has found that the remedies are well borne, have an antiphlogistic and antiseptic action, and that they serve as excellent cicatrizants.

In this connection it is worth while to give the method for treating these cases in the authors' service in the Jefferson Medical College Hospital.

The order in which the treatment is instituted is as follows :—

(1,) A thorough search is made for the cause of the ulcer and, if possible, it is removed. Frequently a small foreign body will be found in the ulcer itself, or there will be misplaced cilia dragging over the cornea, or there may exist a severe conjunctival inflammation perhaps caused by an extension from a diseased lachrymal duct or even from the nares. Whatever the cause is, it must be removed as quickly and radically as possible.

(2,) At frequent intervals **Moist Heat** is applied by means of lint or flannel compresses dipped into water at a temperature of 120° F.

(3,) If there is unhealthy conjunctival discharge, a solution of **Mercuric Chloride** (1 in 6000), or a saturated solution of **Boric Acid**, or **Formaldehyde** (1 in 2000), is instilled into the conjunctival *cul-de-sac* at frequent intervals.

(4,) **Atropine** drops, 4 grains to the fluid ounce for adults, and half this amount for children, are instilled with sufficient frequency to maintain mydriasis, if there is a tendency to iritis; while **Eserine** (a $\frac{1}{4}$ to a $\frac{1}{2}$ grain to the fluid ounce), is used in peripheral ulcers with a tendency to perforate the cornea. On account of the tendency of eserine to produce ciliary irritation, it may be employed several times during the day and the atropine drops once or twice a night. Should an attack of iritis complicate the case at any time, the eserine must be discontinued and the atropine used more frequently.

(5,) The eye is protected by means of a pair of **Smoked Glasses** of medium tint, or by the use of a **Bandage,** provided purulent discharge is absent.

The bandage should be applied lightly but firmly over a **Dry Antiseptic Dressing**, and should keep the lids closed and at rest without making undue pressure on the eye-ball. It should be worn until the floor of the ulcer is covered with epithelium, which protects it from external irritation. Before applying the bandage atropine is instilled, and **Iodoform** that has been pulverized and sterilized is dusted on the ulcer.

(6,) If the ulcer shows a tendency to spread rapidly, it is **Curetted** by means of a specially devised instrument, and immediately afterwards it is gently touched with a probe dipped in pure **Carbolic Acid,** a strong solution of **Nitrate of Silver**, or the **Tincture of Iodine.**

(7,) If the ulcer continues to spread, the **Actual Cautery** may be used. A piece of platinum wire secured in a suitable handle, the one used for holding the laryngoscopic mirrors serving very well, is heated as hot as possible in the flame of an alcohol lamp and applied to every portion of the ulcer, the area of which is outlined by means of **Fluorescine.** After the application of the actual cautery, the eye is dressed in the ordinary manner.

For the treatment of those cases of corneal ulcer which follow the removal of the Gasserian ganglion, Dr. W. W. Keen and Dr. de Schweinitz employ a **Buller's Shield** as a protective until such time as sensation begins to return in the cornea. In those cases in which it has not been employed as a prophylactic measure and the ulcerative process has set in, the best means of combating it is by the application of the shield together with the regular treatment for ordinary corneal ulcers. The shield, as is well known, consists of a watch crystal with a flattened surface, having attached to its margin all around a piece of adhesive plaster so that the eye can be completely protected and yet the patient at the same time able to employ the eye.

Personal experience in the use of sub-conjunctival injections of mercuric chloride in cases of corneal ulcer has not given them the place of value to which they have been assigned by many ophthalmic surgeons. Our own experience has been that injections of a solution of **Sodium Chloride** beneath the conjunctiva proves equally beneficial, and that neither is of much use in the treatment of ulcerative diseases of the cornea.

To hasten the reparative process when an ulcer becomes sluggish, or to clear up the corneal opacities after the subsidence of the acute symptoms, the use of an ointment of the yellow oxide of mercury combined with massage still remains our best means of treatment.

REFERENCES.—[1] "Brit. Med. Journ.," Jan. 18, 1896; [2] "Ophthalmic Record," March, 1896; [3] "Annales d'oculistique," Jan. 1895; [4] "La Polyclinique" (Brussels), Jan. 15, 1896; [5] "La Presse méd. Belge," Aug. 11, 1895; [6] "Indian Med. Chir. Rev.," Jan. 1896.

URACHUS (Patent). *A. W. Mayo Robson, F.R.C.S.*

The following case reported by Mr. W. H. Brown[1] is of interest because of the treatment adopted, which proved so successful.

"The patient, a boy aged seven, was sent to me by my friend Dr. Knowles, of Barnsley, the history being that since birth the bulk of his urine had dribbled through the umbilicus. Voluntary micturition occurred at the ordinary intervals of time, when quite as much urine escaped by the fistula as along the natural passage. In all other respects the child was healthy. On examination I found the ordinary umbilical configuration replaced by a single transverse slit. The surrounding skin was puckered into folds radiating outwards for about one inch from the opening, and it was perfectly natural and healthy. On making firm pressure above the pubes, a drachm or two of normal urine could be squeezed from the opening, through which a probe was easily passed downwards into the bladder and made to touch a catheter introduced *per urethram*. The prepuce and urethra were

normal in size, and no obstruction was offered to the passage of a No. 7 catheter. There was no history of urinary trouble during any period of life, and examination showed that any cause of obstruction, such as polypus or stone, was entirely absent.

"I decided to close the opening if possible by operation, and after ether had been administered I made an incision completely encircling the puckered skin, and dissected this upwards towards the opening. A stout director was then passed through this towards the bladder, and a silk ligature firmly tied round beneath the little flap of free skin to prevent any outflow of urine. The skin incision was then prolonged downwards for about one and a half inches in the middle line towards the pubes, and the duct, as identified by the director in it, was freed from surrounding parts for the distance of one and three-quarter inches. A second ligature was now applied, the director being slowly withdrawn, whilst it was being tightened up, thus occluding the duct; the free portion above the ligature was cut off. The cut end was then thoroughly cleansed, inverted and closed by a continuous silk suture, and the stump allowed to retract. This was unfortunately followed by a very free hæmorrhage from the deep part of the wound, and in trying to arrest this the peritoneum, which had previously not been touched, was unavoidably opened, and coils of small intestine presenting added to the difficulty of finding the bleeding points. Eventually this was accomplished, the peritoneum was sutured with a continuous gut suture, and the skin incision closed in the usual manner. The after-progress of the case was satisfactory, and therefore uneventful. A catheter was used frequently for the first four days, after which micturition occurred painlessly, and unaided."

REFERENCE.—[1] "Quarterly Medical Journal."

URÆMIA. (See "Bright's Disease.")

URETER (Surgery of). *E. Hurry Fenwick, F.R.C.S.*

Catheterization of the Ureters in the Male.—Gaither[1] calls attention to the fact that for many years it has been the aim of those interested in medical science to discover some method by which the exact condition of the kidney could be ascertained. Judging from the urine passed by the patient, it was often impossible to tell whether the disease was in the urethra, bladder, or kidney. If the trouble were located in the kidney, the questions at once arose: Which kidney is affected? Is one kidney normal? or, Are both diseased?

The invention of the cystoscope by Nitze in 1879 gave the opportunity for the positive diagnosis of vesical and renal diseases. By finding the ureters, and watching the jets of urine, it was possible to estimate

comparatively the amount secreted by each kidney, and to discover renal hæmaturia. In 1888 Brenner suggested that a cannula should be placed along the inferior portion of the cystoscope for the purpose of changing the fluid in the bladder without removing the instrument. Through this cannula he attempted to catheterize the ureters in the male, but without success. The late Dr. James Brown, of the Johns Hopkins Hospital, performed this operation successfully on June 9th, 1893, using the Nitze-Leiter cystoscope with Brenner's modification. The shaft of the cystoscope used is elliptical, having a circumference equal to a No. 28 French sound. The vesical end of the cannula is separate from the shaft, curving downward when the cystoscope is in position in the bladder. The operating table should be 92 centimètres high, with an extension on the top 45 centimètres wide, projecting 40 centimètres. The patient lies on his back, with his buttocks on the end of the projecting board, the legs being widely separated and resting on stools 64 centimètres high. This allows the operator room for his knees, as he sits on a stool, which can be adjusted to any height desired, in order to bring his eye on a level with the cystoscope.

The urethra having been irrigated with a 1 in 40,000 bichloride of mercury solution, 2 c.c. of a 4 per cent. solution of cocaine are injected into the deep urethra, and 4 c.c. into the anterior. As a rule, cocaine gives satisfactory anæsthesia, but it is sometimes necessary to use ether or chloroform. In one case that could not be catheterized with cocaine, the operation was easily performed under chloroform.

The bladder is washed, through a metal catheter, with a solution composed of Thompson's fluid, with enough salt added to make a normal salt solution. Thompson's fluid is composed of borax 1 part, glycerine 2 parts, water 2 parts; and 300 c.c. are added to a flask containing 2,000 c.c. of sterilized water. The solution is allowed to run in by syphon from a graduated jar, and care is taken not to over-distend the bladder; when it returns clear, the bladder is emptied, and from 100 to 300 c.c. are introduced. The cystoscope having been lubricated with glycerine, is introduced, and absorbent cotton wrapped round the ocular end to take up the few drops that will escape between the time the stylet is removed and the catheter inserted.

The ureter of the suspected kidney is first sought, as in case much time has to be lost in finding it, and the urine from only one side can be obtained, it is desirable to have that from the probable seat of disease.

If the ureter is not easily found, it may be located by occasional jets of urine shooting across the window, or by a swirl of blood if the case

is one of renal hæmaturia. The ureter may present at such an angle as to make the introduction of the catheter impossible. The presentation can be changed by raising or lowering the patient's leg, or it may be necessary to increase or diminish the amount of fluid in the bladder. When ready to catheterize, the stylet is withdrawn and the catheter quickly slipped into the cannula. The main difficulty to be overcome is to make the tip of the catheter take a sharp enough bend to enable it to engage in the mouth of the ureter; otherwise it slips over and along the bladder wall most provokingly. Nitze's latest cystoscope is designed for the necessary curve, and is freely movable over the optical portion of the cannula in any direction without changing the focus, which greatly simplifies and facilitates the operation. The ureter, in entering the bladder, passes obliquely for 2 centimètres between the muscular and mucous coats. As the catheter is pushed on, it can be distinctly seen running under the mucous membrane until it leaves the bladder. It is introduced 8 centimètres, and while in the ureter is kept under continuous observation. In irritable bladders the tenesmus may bend the catheter almost to a right angle. The first drops appear in from one to five minutes, and are allowed to escape, in order that the bladder fluid may be washed out of the catheter.

A sterilized test tube receives the urine, and in from five to ten minutes enough can be collected for the purpose of analysis. If the urine does not flow freely, it can be accelerated by pressure over the kidney downward along the course of the ureter. It is essential in all cases, in order to catheterize the ureters, first, that the bladder shall be capable of holding sufficient fluid to bring the mouths of the ureters into view; second, that cystitis or hæmaturia do not exist to such a degree as to render cloudy the fluid introduced into the bladder before a reasonable time has elapsed. If these conditions are complied with, almost every ureter can be catheterized.

Caspar's instrument for catheterizing ureters has been advocated in the United States.

In chronic nephritis the catheterization of the ureters is of the greatest value in establishing a correct prognosis. If the disease is found to be in one kidney, with the other normal or only slightly involved, the outlook is favourable. This condition would explain some cases which are seen clinically, in which the urine is loaded with albumin and tube casts, but which go on for years without developing serious constitutional symptoms. The information obtained from catheterization will prolong many lives, by preventing the surgeon from operating when evidence of advanced disease on both sides is

determined; and also by urging an immediate operation when one kidney is normal, with a pyelitis or pyelo-nephritis on the other side, exhausting the patient's vitality more and more each day. If one kidney is slightly diseased and the other considerably, it will influence the operator to do a nephrotomy instead of a nephrectomy, thus leaving the gland to aid its less crippled fellow, and possibly turning the balance on the side of life. By following the methods which are now open to us, the percentage of fatal results after operations on the kidneys should be still further lowered.

The author expresses the opinion that the time has arrived when no renal surgery should be attempted until after the surgeon has obtained accurate and positive knowledge of the condition of each kidney by means of the catheterization of the ureters.

Catheterizing the female ureters by Kelly's method was fully alluded to in last year's issue (Cp. "Medical Annual," 1896, page 597).

Ureterocystostomy.—Krause[2] had a case of uretero-vaginal fistula form after a cancer operation. Autoplasty having failed, the author performed a laparotomy, freed the ureter above the fistula, divided it, and implanted it into the apex of the bladder, the latter viscus having been incised over a sound passed through the urethra. The ureter was drawn through the bladder by a pair of forceps, and was fixed in this opening by several sutures, none of which penetrated the mucous membrane. The patient recovered.

Westermark,[3] in the course of an extirpation of cancer by the sacral route, was compelled to resect a portion of the left ureter and the bladder wall on account of diseased structures. The affected region having been removed, the cut end was attached to the bladder by a series of catgut sutures. The patient recovered without fistula. Of two other cases of sacral hysterectomy, the author, in one instance, completely divided the ureter; in the other divided it partially. In the first case the ureter was secured to the external wound; later the kidney had to be removed. In the last case the opening was closed by suture.

Dr. J. M. Baldy[4] gives a report of a case of surgical injury to the ureter; in which, in operating for removal of a cystic tumour from the abdominal cavity, one of the ureters was divided, continuity being restored by drawing the proximal extremity of the ureter through an incision into the bladder and attaching it by suture to this viscus.

Penrose[5] refers to a similar case, in which, in the course of an operation for the removal of malignant disease of the uterus, a ureter was intentionally divided, functional relations being re-established much in the same manner as that just described.

REFERENCES.—[1] "Journ. of Cut. and Genito-Urinary Dis.," Dec., 1895; [2] "Centralblatt f. Chir.," No. 9, 1895; [3] "Annales des maladies des organes genito-urin.," Aug., 1895; [4] "Med. Record," Feb. 22, 1896; [5] loc. cit.

URETHRA. *E. Hurry Fenwick, F.R.C.S.*

Posterior Catheterism.—Kukula[1] reports five recent cases of very difficult urethral stricture successfully treated by Maydl, of Prague, by posterior or retrograde catheterism. In each of these cases, after failure in the course of an external urethrotomy to find the proximal or vesical end of the slit urethra, suprapubic cystotomy was practised, and a metal sound passed from the bladder, at first as far as the seat of stricture, and after excision of cicatricial or fibrous tissue, along the whole length of the canal. This having been replaced by a soft retention catheter, which in course of the after treatment was renewed every third or fourth day, the wound in the bladder was left to close by granulation. A table of forty-five cases, collected by the author from different sources, shows that this method of treatment is indicated chiefly in cases of impermeable stricture of traumatic origin, due either to fracture of the pelvis or to direct injury to the perineum. In six cases the operation was performed for the relief of retention caused by recent laceration of the urethra. The mortality, which amounted to 10 per cent. in this series of cases, cannot be regarded as unfavourable to posterior catheterism in comparison with other methods, as the operation in the four fatal cases was performed on patients suffering either from severe injury to the pelvis or from cystitis with renal complications. The after treatment in the cases of recovery lasted in about half the number from six weeks to two months. The average period in instances of impermeable stricture the author finds to be sixty-seven days.

Mr. Furneau Jordan took advantage of the distended condition of the urethra behind a stricture to effect dilatation from behind forwards, and describes this method of treatment in a paper in the "British Medical Journal," Nov. 9, 1872.

Urethral Defects treated by Transplantation of Mucous Membrane.—Sapiejko[2] claims that he has had excellent results by transplanting the mucous membrane for the restoration of portions of the male urethra which have been destroyed by injury or stricture.

The grafts are taken from the patient, preferably from the mucous membrane lining the lower lip; they may be of considerable size—a quarter of an inch long to an inch in width. The graft is fixed in the perineal wound by catgut suture at either end to the divided urethra, and along its margin to the adjacent tissues. The wound is left open,

a catheter is introduced into the bladder from the perineum, and a suitable dressing applied. When the graft has firmly united, the perineal wound is closed by sutures and a catheter inserted from the meatus. In the cases quoted in the illustration a full-sized bougie could be passed with ease as late as two years after the operation.

Transplantation of part of a Sheep's Urethra to Man.—Clennell Fenwick[3] successfully filled a gap in the deep urethra of a man by transplanting a piece of a sheep's urethra.

Retention Cysts of Cowper's Glands.—Mr. Hurry Fenwick[4] writes upon retention cysts of Cowper's glands as a cause of chronic gleet, spasmodic stricture, organic stricture, extravasation of urine, and of so-called false passages in the bulbous urethra.

He has found by aëro-urethroscopy (cp. "Annual," 1893, p. 66) that retention cysts of Cowper's glands are not infrequent in the adult, and he considers they form an important clue to one of the causes of some of the more obscure and chronic affections of the deep urethra.

Two years ago, the author, during an aëro-urethroscopy, discovered an ovoid swelling on the floor of the bulbous urethra. The mucous membrane covering the elevation was gelatinous and very much congested. The appearance of the projection was suggestive of that of a ranula, and as the glands of Cowper empty themselves in this position, a retention cyst of one of these glands was diagnosed. The tumour was opened with a fine urethral knife passed through the cannula under the control of the eye, and about a drachm of mucus streaked with milky pus evacuated. On re-inflation a loculated cyst was seen to have been opened, which extended backwards beneath the membranous urethra.

Nine other cases have come under the observation of the author.

Cowper's glands are situated between the layers of the triangular ligament and beneath the membranous urethra. Their ducts pierce the ligament, course beneath the mucous membrane of the urethra for about an inch or more, and open in the bulbous urethra, either separately on each side of the median line, or join together in a common orifice. Careful aëro-urethroscopy will sometimes reveal thin slit-like openings in this position if inflamed (*Fig.* 60).

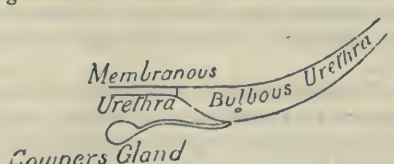


Fig. 60.

On blockage of the duct either by inflammation or scarring, the gland becomes distended with mucus and the duct dilates. Gradually

an ovoid or loculated cyst the size of a haricot bean or damson forms below the membrano-bulbous urethra, and projects upwards on to the floor of the bulbous section (*a*, *Fig.* 61). Probably the greater part of the swelling is at first merely a dilatation of the duct itself, but as the tension increases and no relief is obtained either surgically or spontaneously, the cyst extends backwards, makes its way through the deep or posterior layer of the triangular ligament, and bulges upwards on to the prostatic urethra.

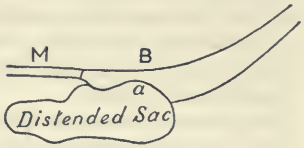


Fig. 61.

The author states that from access of inflammation, or tension necrosis, the cyst bursts into the bulbous urethra (*Fig.* 62, *áá*) ; rarely into the prostatic canal.

One, two, or more thin-edged oval openings remain. On inflating the canal, they can be clearly distinguished on the floor of the bulbous urethra (*Fig.* 63). Through these orifices the inner aspect of the empty cyst may be viewed, its shining white loculated interior standing out in strong contrast to the red succulent mucous membrane beneath which it is placed. In some cases, after incising the opening, a No. 18 or 20 (French gauge) cannula may be inserted into the sac and its interior inflated, so that the offshoot channels which pass posteriorly (*Fig.* 62 *b*), from it can be studied.

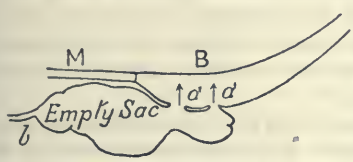


Fig. 62.

In some cases where the duct has suffered most and temporarily (?), only a thin oval opening is detected, and the track of the dilated duct can be distinguished passing backward from it along the floor of the urethra by the gleam of whitish light which traverses the thin diaphanous wall.

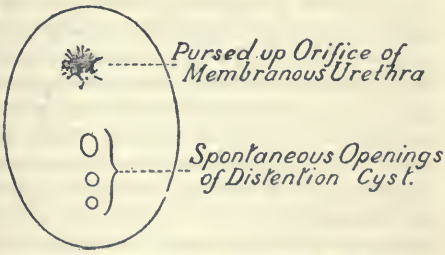


Fig. 63.—Enlarged aëro-urethroscopic view of floor of bulbous urethra.

Little by little, unless a surgeon thrusts the point of a bougie into the sac through its mouth and tears up its wall, contraction takes place, but the duct and orifice probably remain patulous for years.

The mucous membrane in front of these openings is probably not infrequently fretted and sclerosed by the escape of the discharges and regurgitations from the sac. Strictures may form in this position; and the muscles—the compressor urethræ and the accelerator urinæ—suffer to some extent by inflammatory transudation, for their energy becomes impaired and the urine is not freely ejected in micturition as it should be in health.

Symptoms of Retention Cysts of Cowper's Glands.—The symptoms of vesiculitis, inflamed prostate, sub-acute cystitis, and stricture, may be present coincidently with those evoked by retention cysts of Cowper's gland, for the gonorrhœal invasion which affects the ducts attacks also the adjacent areas of the urethra. It is somewhat difficult, therefore, to assign to their proper quarters the symptoms evoked by inflammation of these separate areas. In the author's opinion the symptoms which arise from retention cysts are :—

(1,) A chronic milky gleet, slight but persistent. In one case it had been present from two to six years, and in evidence of it being largely dependent upon the presence of the cyst, it was at once reduced upon incising and evacuating its contents.

(2,) A distinct though slight obstruction to the free passage of urine. Apparently this was due to the spasm which the gland excited in the compressor urethræ, for on inflating the bulbous urethra the orifice of the membranous canal was tightly compressed and the entrance of air was strenuously resisted. Part of the obstructive feeling might have been due to the narrowing of the tube from flattening of the inferior wall of the membranous urethra by pressure of the cyst. This obstruction was at once relieved by incision.

(3,) A dull, heavy weight and pain on one or other side of the median line of the perineum at the margin of the anus, somewhat similar to the pain of vesiculitis and of chronic prostatitis, and probably often mistaken for them. This pain is liable to exacerbation by cold, alcohol, etc.; under these circumstances it spreads to the tuber ischii and down the inside of the leg of the same side. Pain over the sacrum and corresponding groin is also complained of.

These three symptoms are much increased just before the spontaneous rupture of the sac, and great relief to all is experienced on the appearance of a little rush of mucus, pus and blood from the meatus.

When the cyst has emptied itself there is a sense of tickling or fly crawling in the deep urethra, and the patient has to lift up his perineum with his hand at each micturition to empty his canal; but of course these symptoms are experienced in other troubles in the deep urethra.

TREATMENT.—The author has incised cysts which have not burst, by means of a fine harpoon knife passed along the urethral cannula; he has then introduced a cannula bodily into the cyst, and pencilled the whole wall with solid **Nitrate of Silver,** limiting and checking the action of the caustic by means of a swab of salt solution or of cocaine hydrochlorate. The more surgical method and one which the author intends to adopt in future is to thrust a fine tenotome into the sac from the perineum, guiding it by means of a urethral cannula placed over the cyst. In this case the urethra is not opened. The sac would then be stuffed with iodoform gauze. If the cyst has already burst the orifice is to be enlarged and the sac pencilled with caustic.

Blennorrhagic Diverticuli and Peri- or Para-Urethral Abscess with Gonococci.—Dr. Batul[5] gives the following as his conclusions :—

(1,) There exist blennorrhagic diverticuli around the meatus, in Tyson's glands, along the canal in Mery's and Cowper's glands, the latter more studied but less frequent than the preceding.

(2,) Certain large ducts above the urethra, as it were blind external fistulæ, or communicating posteriorly with the bladder by a filiform canal, are supplementary urethras due to an arrest of development in the upper urethra and are not erratic glands of Luschka. These supplementary urethras may be primarily invaded by the gonococcus, the normal urethra remaining intact.

(3,) The gonococcus may also set up peri-urethral abscess without connection with the canal or with the annexed glandules of the latter, just as it may provoke an abscess at a distance in the peri-articular connective tissue.

(4,) The treatment of the diverticuli is by actual cauterization according to Diday's method; for Cowperitis, incision, and cautery; for peri-urethral abscess, large incision.

(5,) Extirpation is the only method of treatment truly surgical in all blennorrhagic inflammation of a supplementary urethra.

Argonin in the Treatment of Gonorrhœa.—**Argonin** is a silver albumin combination, and in strong solution produces very slight irritating effects. It is a white powder, soluble in 10 parts of water, containing one-fifteenth as much silver as silver nitrate. No precipitate is formed by the addition of sodium chloride or of albumin or albumin-containing substances. As to the bactericidal property, this is less than a similar strength of silver nitrate solution or of argentamin lotion. The penetration of argonin is less marked than either silver nitrate or argentamin. It is, however, very much less irritating, and hence more serviceable for continued treatment.

In cases of anterior urethritis the urethra is first syringed out with a solution of 15 to 1000.

Jaddosohn's[6] conclusions in regard to the medicament are that experimental and clinical investigations show that this drug inhibits the growth of gonococci in solutions of 1 or 2 per cent. Even in stronger solutions it has hardly any tendency to set up inflammation, and has no caustic properties, so that it is particularly suitable for use in the treatment of acute gonorrhœa in men, whether affecting the penile or the deep urethra, and of gonorrhœa of either the urethra or the uterus in women. It seems destitute of astringent properties, and on that account purely anti-catarrhal treatment should accompany its use.

The Treatment of Chronic Blennorrhagia in Men.—Dr. J. Janet[7] lays stress upon the observance of the following points : (1,) To search for the presence of gonococci, to locate their habitat, then to suppress the gonococcus completely ; (2,) To suppress, as far as possible, the secondary infections, other microbic invasions, which are often engrafted on an old gonorrhœa, and continue after the gonococci have disappeared, then to take measures that these do not return or are kept down ; (3,) After this the urethral or bladder symptoms may be treated according to the lesions left behind and the means appropriate to them.

The author maintains that if we wish to avoid the accidents which not infrequently are set up by mal-directed instrumentation, such as epididymitis, we must first rid the urethra of the gonococcus, and be sure that it cannot return. This he believes to be a comparatively easy matter, by means of large irrigations of the entire urethra with warm solutions of **Permanganate of Potash**, of the strength of 1 in 4000, gradually increased to 1 in 1000, and even 1 in 500 for the anterior urethra, preceded, if necessary, by massage of the prostate and urethra to empty the follicles. The opening and scraping of fistulous tracts, the laying open and scraping of the follicles at the meatus if they are involved, or of follicles about the frænum, are also measures to be taken. These irrigations should be made daily for ten or twelve days, and search for the gonococcus made at the end of this time—if necessary, resorting to the different methods of causing a reaction, which will reveal their presence (*e.g.*, the injection of 1 in 2000 solution of nitrate of silver). Finally the injection into the anterior urethra of a solution of mercury bichloride (1 in 20,000 to 1 in 10,000). This latter has the advantage of suppressing for the time being the other microbes. If the gonococcus is found, another series of irrigations with the permanganate must be undertaken.

The suppression of the secondary infections is oftentimes more difficult, as they are not so easily reached by the irrigations; and it is these infections which Janet regards as quite as important to suppress, not only for the well-being of the patient himself, but for the wife, if he is contemplating matrimony. The method for this is to use sublimate irrigations, in strength of 1 in 20,000 for the entire urethra and bladder, and instillations of nitrate of silver and sulphate of copper. The sublimate may be used in conjunction with the permanganate by adding to 1 litre of the permanganate 50 c.c. of 1 in 1000 sublimate solution. To prevent return of microbic invasion, the author advises, in some cases, injections of boric acid solution after urination, and the frequent washing of the glans, prepuce, and meatus with 1 in 1000 sublimate solution.

In this connection an observation of Wertheim's is worthy of special attention. He has found that gonococci obtained from the secretions of chronic gonorrhœa can be cultivated so as to acquire a high degree of virulence, and when inoculated in the urethra of the patient from whom they were derived, will give rise to an intense gonorrhœal inflammation. It has been quite frequently observed that patients suffering from latent gonorrhœa at the time of marriage have infected their wives, and at a later period acquired from them in return an acute urethral inflammation. Wertheim's experiments are, therefore, of importance in affording a rational and scientific explanation of this clinical observation.

Janet further advises the treatment of urethral lesions by the urethroscope, by sounds, massage of urethra and prostate, etc. He mentions infections of seminal vesicles, but does not suggest any method of dealing with them.

REFERENCES.—[1] "Klinische Zeit und Streitfragen," Bd. ix., Hft. 5-6; [2] "Therap. Gaz.," Jan. 15, 1895, and "Edin. Med. Journ.," Nov., 1894; [3] "Lancet," March, 1896; [4] "Brit. Med. Journ.," Jan. 4, 1896; [5] "Archiv. de méd. et de pharm. milit.," Nov. 9, 1895; [6] "Monatshefte für praktische Dermatologie," Bd. xxi., No. 7; [7] J. Janet, "Ann. d. mal. d. org. gén.-urin.," p. 481, 1895, and Wertheim, "Inter. Journ. of Surgery."

URINATION (Painful). *Theophilus Parvin, M.D., Philadelphia.*

Dr. Eshner[1] reports the cases of two girls, aged twelve and thirteen, who suffered burning pain in urinating, the one urinating frequently, the other seldom. They were cured by employing 5 drops of the fluid extract of **Ergot,** and the same amount of tincture of **Belladonna.** The disorder, Dr. Eshner believed, was caused by low atmospheric temperature.

REFERENCE.— [1] "Polyclinic," March, 1896.

URINE (Incontinence of in Children).

Henry Dwight Chapin, M.D., New York.

Dr. J. F. Prendergast[1] has used successfully the **Cold Douche** in a boy's orphan asylum.

"The method employed in treating the cases was as follows: The boy was stripped and placed standing in an empty bath tub. A basin, or a vessel with a spout to it, like a watering can, was filled with cold water and poured over the shoulders and down the back of the subject. In the nervous, delicate children, one dash of water was sufficient for an application; in the sluggish, phlegmatic lads, the dose might be repeated. The boy was immediately rubbed down, dressed in his night clothes, and put to bed. From a hygienic point of view the cold water has proved an excellent tonic; not one of the eighty boys has had a "cold" the past winter. A number of the boys treated suffered from incontinence of urine during the day, but have all been cured. Occasionally we have a backslider whose spinal centre takes a "nap," but it is at once put on guard by a douche or two. The ages of the boys ranged from six to twelve years, and we have four hundred and eighty-five in the institution. Since starting this article, I have learned an important point in carrying out this treatment: it is, that sponging the back with cold water does not have the same effect as douching."

Tonic treatment with **Strychnine, Iron** and **Quinine**, is used successfully as an adjuvant.

Dr. J. M. Taylor[2] recommends **Sulphonal** to be taken at night in a large dose—6 to 10 grains—and as well in smaller doses—2 to 4 grains—during the day. Believing that instability of the nervous equilibrium is the essential factor, and some one of the various reflex irritants the supplemental cause, he concludes that enuresis does not take place in an entirely healthy child.

Dr. Grondech[3] has discovered a connection between adenoids and enuresis. In a number of cases in which adenoids were removed, the enuresis subsided at once. In four cases the adenoids reappeared, followed by enuresis which again subsided when the adenoids were removed.

REFERENCES. — [1] "New York Med. Journ.," July 11, 1896; [2] "Pediatrics," No. 4, 1896; [3] "Arch. f. Kinderh.," B. xx., H. iii-iv., 1896.

URTICARIA.

P. G. Unna, M.D., Hamburg.

Norman Walker, M.D., Edinburgh.

Professor Wright[1] of Netley, has a very interesting paper on the treatment of urticaria by **Calcium Chloride**. He finds that in most cases the coagulation of the blood is delayed abnormally, and since this

is corrected by calcium chloride, he thought that it should be useful in this condition. He describes two cases, one an old man of eighty-four, where the benefit was exceedingly marked, and the patient's general health was in three weeks enormously improved. He notes that large doses should be administered at the start, in order to supply the deficiency of lime, and to bring the patient rapidly under the influence of the drug. Afterwards the doses should be reduced. Secondly, that even where there is not any notable defect of blood coagulability, the lime salts are useful, and he suggests it might be tried in weeping eczema. Thirdly, it directly supplies nutrition to the heart muscle.

Berliner[2] recommends that the wheals should be rubbed with **Salt** and **Water**. (Urticaria is a disease so evidently dependent on internal causes that external applications are merely palliative.—N.W.).

Brocq[3] recommends the following pomade :—

Acid Carbolic	gr. xv	Lanolin	℥ss
Ess. Menth. Pip.	♏ xv	Vaselin	ad ℥ij
Zinci Oxidi	℥iij		

The application of the ointment can be preceded by antipruriginous lotions of **Chloral** in **Eau-de-Cologne.**

In addition, he prescribes internally 2 to 10 of the following pills per day :—

Quiniæ Hydrochlor.		Extract. Belladonn.	gr. ⅙
Ergotin	āā gr. jss		

REFERENCES.—[1] " Brit. Journ. Derm.," March, 1896 ; [2] " Rev. de méd et de chir," July 25, 1895 ; [3] " Practitioner," June, 1895.

UTERUS (Cancer of). *Theophilus Parvin, M.D., Philadelphia.*

Dr. W. S. A. Griffiths[1] says that the characteristic feature of the pain of cancer which should attract our attention, and distinguish it from pelvic pain due to inflammation and other causes, is the fact that it is not only not relieved when the patient lies down, but it usually becomes worse, or, at least, less bearable. It is also referred more frequently to the region of the trochanters than is pain due to other causes.

The discharge is rarely the first symptom; it is not purulent, except in rare cases of cancer of the body in old women, or viscid, like the white of an egg, but is watery, and often fœtid and profuse.

Subsequently Dr. Griffiths states: "The great feature which distinguishes a malignant ulcer or nodule from a simple erosion, or the nodular enlargement of the cervix, the result of chronic cervicitis, is the ease with which the malignant disease bleeds when touched. If, in spite of the greatest care and gentleness, bleeding out of all

proportion to the injury does occur, the disease is almost certainly malignant.

"In all doubtful cases of disease of the cervix a piece of the suspected part should be cut out (taking care to include the margin of the healthy and affected part) and be carefully preserved and submitted to microscopical examination."

Dr. Griffiths further says: "The first symptom of cancer is often a hæmorrhage occurring without any assignable cause, and though frequently slight at first, it is not infrequently considerable in quantity; and this symptom occurring in a woman neither pregnant nor recently confined or miscarried, and still more particularly if she has passed the climacteric, should at once raise our suspicions, and lead us to investigate it fully.

"We have enlargement and hardness at first, red and angry little nodules of new tissue to sight, bleeding easily, and hard to touch. A little later we find some of them breaking down, and bleeding without touch, and little pits, excavations forming with grey or yellow surfaces and adherent discharges, and shreds of dead tissue. Later still the new growth seems at first sight to have ceased, and only deepening excavations and ragged holes are apparent, but if we dry them with absorbent cotton we shall see that new epithelial growth is still going on, forming ridges and nodules among the prevailing decay."

Dr. Knowsley Thornton defines cancer as a growth of epithelial cells with malignant properties, that is, the new growth has the power of invading and destroying the tissues in its neighbourhood, and of reproducing itself in distant parts. Its tendency is not only to invade and grow into other tissues, but also itself to break down and die. Hence we have increase and decrease going on at the same time.

Dr. Thornton suggests that if the examiner is in doubt, a little watching, aided by the application of something which will heal an ordinary abrasion or ulceration, such as solutions of **Sulphate of Copper, Nitrate of Silver,** or **Chloride of Zinc,** will generally settle the point, and if this fails, a little piece may be snipped off and submitted to microscopical examination. He advises, however, that the latter should be avoided if possible, and when it is done should be followed as soon as possible by the radical operation.

Schäffer[2] advises in cases of inoperable uterine cancer, with severe hæmorrhage and offensive discharge, powdered **Ferripyrin,** because of its astringent properties and local anæsthesia. It may be applied directly to the diseased surface, or mixed with powdered charcoal, and the mixture placed in gauze bags before introducing into the vagina. Klotz[3] employs curetting, followed by the actual cautery. Schramm[4]

employs parenchymatous injections of **Sublimate, Alcohol,** and **Methyl-violet.** The first is used for its disinfectant power, the second lessens pain, and the third has the power of hardening soft cancer. The results are temporary cessation of the offensive discharge, and the bleeding. In two cases there was severe vomiting, probably from the corrosive sublimate.

Schultz[5] commends parenchymatous injections of **Absolute Alcohol,** 5 c.cm. being employed, and the injections made at several points, but not puncturing very deeply. He thus treated twenty-two patients, the majority cases of cervical carcinoma. Usually, after ten to fifteen injections, the discharge lessened or entirely disappeared, pain in the lower abdomen vanished, and the weight of the body increased. If the growth was too near the peritoneum to risk punctures, the alcohol was used in the form of a bath of the diseased part, a tubular speculum being employed. Duvrac,[6] following the practice of Boucher, of Rouen, recommends the **Chlorate of Soda,** given internally, and employed locally.

The following is the formula advised by Duvrac for internal use :—

℞ Chlorate of Soda ʒvj | Water ʒij
Syrup ʒj |

From two to eight tablespoonfuls daily.

Dr. Guinard,[7] of Paris, has for the last three months been experimenting with **Carburet of Lime** in inoperable cases of cancer of the vagina and cervix. A piece of the carburet the size of a small nut is introduced into the vagina, and placed in contact with the diseased parts. The vagina is then quickly filled with iodoform gauze, which is removed four days after, and an antiseptic injection given. The hæmorrhage, the fœtid discharges, and pain are relieved.

REFERENCES.—[1] "Brit. Med. Journ.," Feb. 1, 1896; [2] "Münch. med. Woch.," 1895, No. 53; [3] "Central. f. Gynäkol.," No. 32, 1896; [4] Ibid.; [5] Ibid., No. 29, 1896; [6] "Paris thesis," and "Med. Press and Circular," July 22, 1896; [7] "Therap. Gaz.," May 15, 1896.

UTERUS (Congestion of). *Theophilus Parvin, M.D., Philadelphia.*

Dr. Graham,[1] in a paper read before the Virginia State Medical Society at its last meeting, advised the glycerine suppository instead of the glycerine tampon commonly employed for the relief of congestion of the uterus and its appendages. The suppository is introduced in the vagina close to the cervix and held in place by a pledget of wool. He found the effect much greater than that of the tampon. He also used glycerine suppositories, each containing 1 or 2 grains of **Alum** and of **Thymol.**

The advantages of the suppository are: (1,) Easy application, as it does not require the use of the speculum; (2,) Its greater and more prolonged effect, its action continuing at least thirty-six hours; (3,) It can be employed in the virgin, the speculum not used nor the pledget of wool; or, if it seems best, the patient can be taught to employ it herself.

REFERENCE.—[1] "Indian Lancet," from the "Med. Review."

UTERUS (Dilatation of). *Theophilus Parvin, M.D., Philadelphia.*

Anæsthetic Tents.—Lefour[1] soaks laminaria tents for eight days before using in:—

℞ Ether	85	Cocaine (pure)	5
Iodoform	10		

REFERENCE.—[1] "Med. Record," March 7, 1896.

UTERUS (Displacement of). *Theophilus Parvin, M.D., Philadelphia.*

Retroflexion.—Theilhaber[1] denies the necessity of a radical cure of retroflexion of the uterus. The symptoms attributed to it are, in his experience, rather due to atony of the bowel, neurasthenia, metritis, endometritis, or other diseases than to retroflexion. Orthopædic methods are valueless, but there is much benefit from symptomatic treatment. He does not regard obstruction as caused by the displacement, and he has treated ninety-five cases, most of them having atony of the colon, without reposition; only two were intractable. Women with retroflexion do not seek professional advice unless they suffer from hæmorrhage or leucorrhœa, and the menorrhagia or nervous disturbance is due to other causes than the faulty position of the womb. Finally, he protests against the number of vaginal fixations, admitting the necessity for the operation only in cases of prolapse.

Merkel[2] prefers ventri-fixation in all uterine displacements in which abdominal section has been made for other affections, such as ovarian or uterine tumour. It is the suitable operation for virgins and married women subject to retroflexion without the uterus being fixed, and in which pessaries cannot be worn because of narrowness of the vagina or psychical causes. Dührssen's operation, vaginal fixation, is advisable if the retroflexion occurs in a woman with a wide vagina, in which other plastic operations are needed at the same time—such as colporrhaphy, excision of the vaginal portion, or perineoplasty.

Dr. Siegfried Stocker,[3] of Lucerne, reports that from the end of 1893 to May 1st, 1895, he has resorted to the "Alexander" operation thirty-seven times: (1,) In twenty-two cases with mobile retroversions or retroflexions; (2,) In ten cases with retroversion complicated by slight uterine fixation; (3,) For prolapse as a single operation in

two cases; (4,) For prolapsus uteri combined with perineorrhaphy in three cases.

The cases in which the backward-displaced uterus was mobile gave excellent results. With partial fixation of the uterus, a recurrence took place in three cases. In the other seven cases the adhesions were more marked and could not be ignored; two of these did well. The five others were treated by a combined Schultz-Alexander operation, and resulted in a good but somewhat fixed anteversion. The three cases in which a combined perineorrhaphy and Alexander's operation was performed gave good results. At intervals of six months, a year, and eighteen months after operation, respectively, each shows the uterus in place and anteverted. The author concludes that Alexander's operation, of all operative procedures, restores the uterus to its normal physiological position, and is attended with no danger.

Anteflexion.—Dr. George Keith[4] advocates the operation of Dr. Dudley, of Chicago, in dysmenorrhœa consequent upon anteflexion, quoting successful cases in his practice, and gives the following method of operating: It is essential to use Sims's speculum, and as this operation may have to be performed on unmarried women the smallest sized speculum, three-quarters of an inch in width, must be selected in such cases. It is thus unnecessary to rupture the hymen unless it is very large. The vagina is to be washed out, a tenaculum is to be fixed into the centre of the anterior lip of the cervix, and the uterus is drawn slightly downwards to straighten the bend as far as possible. A sound is passed to determine the exact direction of the canal which is then thoroughly dilated, preferably with a Goodell's dilator. This is followed by curetting, a large quantity of fungosities being usually removed. The operator then takes the tenaculum in the left hand, and with knee-bent scissors in the right hand, cuts through the whole thickness of the posterior lip of the cervix almost to the vaginal mucous membrane. There are now two cut surfaces, the upper or right, and the lower or left, and each is to be sutured separately. It will be seen that if the surface on one side is doubled on itself so that the point touches the base, and the same is done on the other side, *i.e.*, the os must be either drawn backwards or the base must be drawn forwards—the former occurs, and the point is fixed in this position by sutures. The stitches are made thus: the needle is passed through the whole thickness of the point on one side and from the vaginal surface to the cervical. The stitch is then tied, thus keeping the cut surface doubled on itself. A similar stitch is then put in the lower side, one stitch on each side being usually sufficient. In

this way the incision which was originally longitudinal has become transverse, although in two halves. It will be now noticed that the anterior lip has become elongated, and on bi-manual examination the body of the uterus and the newly formed os will be found in a straight or almost straight line. The after treatment consists in simply keeping the patient in bed for ten days.

The surgical treatment of retrodeviations of the uterus was considered at the Geneva Congress. The reporters were Küstner, of Breslau; Pozzi, of Paris; and Polk, of New York. Among the conclusions of the first reporter were that the results obtained by ventri-fixation, vaginal fixation, and abdomino-vesical fixation, and Alexander's operation, prove that these operations can keep the uterus in good position; vaginal fixation must not be done upon women in the child-bearing period; the best operation in case of moveable retro-deviations is Alexander's, done according to the plan of Werth-Kocher. In case of prolapse of the uterus, usually the consequence of retro-deviation, the operator must, before all, insure the axis of the uterus a normal position. Hence the best treatment of a prolapsed uterus is ventri-fixation, to which should be added at the same time the various plastic operations to narrow the vagina.

Pozzi stated that all surgical treatment of those cases in which the uterus is moveable, aiming to fix the uterus after replacement, by a limited point of its surface, can have only a temporary effect, for constant traction on the point of fixation produces ultimately relaxation. Hence the unsuccessful results which usually occur in a variable time after Alexander's, or similar operations. Abdominal, vaginal, or vesical fixation, are only temporarily beneficial. These operations ought no longer to be done because of the danger that may occur at labour. The rational treatment of such deviations is (1,) Cure the metritis, very common in these cases, by curetting, amputation of the cervix, etc; (2,) Restore the perineum, often ruptured or relaxed, by a plastic operation; (3,) Apply a pessary which fixes the cervix by distending the posterior *cul de sac*, as well as a hypogastric bandage which regularizes the intra-abdominal pressure.

The treatment of fixed posterior displacement is that of the lesions which produced it, and keep it. In other cases the lesions may predominate in the adnexa, a metritis co-existing; here laparotomy is indicated. In dealing with marked lesions of the tubes and ovaries, the former having their canals obliterated, castration should be done, for the woman is necessarily sterile. If there are old lesions of the adnexa on each side, complicated by chronic inflammation and hypertrophy of the uterus, vaginal hysterectomy is the best treatment.

Polk maintained that if pregnancy could occur, ventrifixation, and also vaginal or vesical, ought to be rejected, but in such subjects the round ligaments should be shortened, either by Alexander's operation, or the shortening may be done by opening the peritoneal cavity through the vagina; if necessary the utero-sacral ligaments are also shortened. Dr. Polk gave finally a description of his method of performing these operations.

Retroversion.—Wertheim,[5] of Vienna, first described in March, 1896, a new method for overcoming retroversion of the uterus by an intraperitoneal shortening of the round ligaments. He has recently published another article stating that further experience with his operation only confirms his former views. He advises the opening through the vagina of the anterior peritoneal pouch, between bladder and uterus, the freeing of the uterus from all adhesions and its replacement forward, and then the stitching of the round ligaments into the wound to an extent sufficient to hold the organ anteverted. Bode, of Dresden, has tried this method in several cases and thinks it superior to fixation of the fundus forward, or to any of the other operations for retroversion. This same method seems to have occurred to a number of different operators about the same time. Vineberg,[6] of New York, and Byford, of Chicago, both describe operations very similar to that of Wertheim, performed almost simultaneously with his.

Prolapse.—Jacobs[7] recommends the following operation, which he calls "*collopexie ligamentaire*," for prolapse in women of forty to fifty years, who have been too frequently confined. After disinfection of the vagina and curettage of the cervix, the vagina is plugged, and he performs a partial abdominal hysterectomy by amputating the uterus a little above the internal os, not circularly, but by an anterior and posterior flap, leaving enough peritoneum to cover the stump. After applying chloride of zinc to the collum, the flaps are united by a continuous suture and the peritoneum by another. The upper part of the stump is then secured on either side to the upper part of the broad ligament by several sutures, so as to draw the collum well up in the pelvis. In the single instance in which he had operated in this way the uterus was sound, but if desirable, the collum might be amputated before the cœliotomy, or after total abdominal hysterectomy the broad ligaments might be fastened directly to the vagina.

REFERENCES.—[1] "Brit. Med. Journ.," March 28, 1896, from "Monat. f. Geb. u. Gynäkol"; [2] "Brit. Med. Journ.," from "Franenderartz," March, 1896; [3] "Correspondenz-Blatt. für schweizer Aertze," Dec. 15, 1895, and "Practitioner," March, 1896; [4] "Med. Press and Circular," March 4, 1896; [5] "Centralblatt f. Gynäkologie," March 7, 1896, and

May 2, 1896; [6] "American Gynecological and Obstetrical Journal," June, 1896; [7] "Central. f. Gyn.," p. 415, 1896, and "Brit. Med. Journ.," Sept. 12, 1896.

UTERUS (Fibroid Tumour of).

Theophilus Parvin, M.D., Philadelphia.

Dr. Danborne [1] reports a case of uterine fibroid in a patient forty-five years of age, the discomfort from the growth relieved, and the size of the tumour notably lessened, and the patient made quite comfortable by the use of **Conium.**

Jouin [2] states that he has successfully treated several cases of myoma of the uterus by doses of dry extract of **Sheep's Thyroid Gland.** He gives 4 to 8 tablets daily, equivalent to half a thyroid gland. Out of five cases, the two which have been fairly long under treatment have distinctly improved in health. In the first case the tumour has distinctly diminished in size. Menorrhagia is much diminished by this treatment. As in other classes of patient, hæmorrhoids present in at least one case were greatly relieved.

Dr. F. Howitz,[3] of Copenhagen, had at the same time under his care two women, both of whom were pregnant, and both of whom had had large fibro-myomata of the uterus. One of these women nursed her child, and an examination at the end of five months after its birth showed that her tumour had entirely disappeared. The other woman did not nurse her child, and her tumour remained unchanged. These cases led the author to seek if by means of suction on the nipples a favourable influence could be exerted upon fibrous tumours of the uterus. He has tried it in only five cases, the suction being carried out daily. In some of the cases there seemed to be a diminution of the size of the tumour, and in no case has any harm been noticed as the result of the procedure.

REFERENCES.—[1] "Med. News," Jan. 10, 1896; [2] "Bull. et mémoir. de la soc. obst. et gynécol.," No. 8, 1895, and "Brit. Med. Journ.," Nov. 2, 1895; [3] "Centralblatt f. Gynäkol.," and "New York Med. Journ.," Dec. 28, 1895.

UTERUS (Sub-involution of). *Theophilus Parvin, M.D., Philadelphia.*

Dr. Gill Wylie [1] claims that if cotton pledgets saturated with a mixture of **Boro-glyceride,** and 10 to 20 per cent. of **Glycerine,** be placed in the vagina for twenty-four hours, a large amount of secretion from the uterus and the vagina results. These pledgets were applied two or three times a week in all cases where it was desired to improve the pelvic circulation, reducing the size of the uterus and relieving the congested tissues in the entire pelvis. Especially good results were had after curetting the uterus, and draining, the treatment being more

rapid and certain than the prevailing plan, so much practised, of rest in bed, hot vaginal douches, etc. Besides, making the roll of cotton firm, and from one and three-quarters to two inches long, and from one to one-and-a-half inches in diameter, a sagging retroverted uterus could be readily held up in a more natural and better manner than by a hard pessary. The active circulation caused by the mixture contracted the vaginal tissues so that the cotton pledgets remained in place, and this contracted and firm condition of the tissues would continue for a day or two in most cases, thus permitting the patient to go about without trouble for twenty-four to forty-eight hours after the removal of the cotton, giving time to cleanse away the coagulated mucus, etc., from the vagina. He states that for fifteen years he has taught and practised this simple treatment in all cases after abortions, especially when there was any inflammation or hardening of the uterus complicating the abortion, and in all cases after labour where one desires to insure a return of the uterus to its normal size and position in the pelvis. He refers likewise to the fact observed by himself that many cases of melancholia, extreme nervousness, and sterility, are caused by sub-involution or enlargement of the uterus, and that the cure of the local disease removes the disorders consequent upon it. "By the simple application of the boro-glyceride the patient is able to get out at the end of two weeks without injury, and is dismissed perfectly cured at the end of six or eight weeks."

REFERENCE.—[1] "New York Med. Record," Sept., 1895.

UTERUS (Surgery of the). *Thcophilus Parvin, M.D., Philadelphia.*

Vaginal Hysterectomy.—Dr. R. Pichevin [1] considers that carcinoma, sarcoma, and fibroid disease are indications for uterine extirpation by the vaginal method, which may also be extended to certain cases of prolapse, inversion, bi-lateral and incurable diseases of the uterine appendages, and pelvic suppuration.

The chief dangers in operating are injury to the bladder and the ureters, and failure to secure the uterine and ovarian arteries.

To facilitate the control of the ovarian artery several operators have practised turning over, either in a forward or backward direction, the fundus of the uterus. Others, such as Billroth and Olshausen, contented themselves with forcibly drawing down the organ, thus bringing within easy reach the upper part of the broad ligament.

After describing Péan's method of removing myomata by *morcellement*, the author proceeds to mention the procedure of Müller, of Bâle. According to him a median section of the uterus is not accompanied by loss of blood, and it facilitates the rapid performance of hysterectomy, with easy control of the blood-vessels.

Doyen, of Rheims, has modified the above method, which is characterised by not only an anterior median section of the uterus, but by the application of hæmostatic forceps from above downwards, when the organ is drawn down to the vulva or exterior to it, instead of from below upwards, as by Péan's operation with the uterus *in situ*.

Segond's operation is a combination of Péan's and Doyen's, and, according to the author, inferior to both.

The advantage of the vertical anterior hemi-section is to render hæmostasis unnecessary until the uterus is drawn out of the vagina.

In difficult cases, when, by reason of the bulk of the uterus or from adhesions interfering with its mobility, Péan's is the operation of choice.

Bücheler[2] presents statistics of Kaltenbach's operations performed according to his method, in which the peritoneal flaps are sutured, which appear more favourable than the clamp operation.

The following is the method of removing the uterus employed by Richelot,[3] one of the most eminent and ablest of French surgeons. The patient lies upon her back, and the lower limbs flexed, the operator being between, which is the position employed by Winckel, by Martin, and by some other European operators. Thorough disinfection of the abdominal wall and of the vagina is of course made. Scalpel, dissecting forceps, long and short hæmostatic forceps, and two long forceps known by his name, are needed. After the abdominal incision, the uterus is brought out through the wound. If the lower part of the organ is occupied by the neoplasms, the usual *morcellement* is done, but, if interstitial, they are not interfered with, but the operator at once makes an anterior peritoneal flap by an incision, severs the anterior wall of the uterus from side to side, so that the broad ligaments can be set free and drawn down from the bladder. The left index finger is passed into the vagina in the anterior *cul de sac*, and it is cut with scissors to an extent corresponding with the anterior wall of the cervix. Next, the broad ligament of one side is held with the hand, and the posterior *cul de sac* is sufficiently opened, so that one blade of Richelot's forceps is passed through, while the corresponding blade passes through the opening in the anterior *cul de sac*. The corresponding forceps is similarly passed on the other side of the uterus, and then each broad ligament firmly secured. Next, the lateral attachments of the uterus are divided. The remaining posterior attachment is cut, and bleeding vessels are at once secured by hæmostatic forceps. A plug of **Iodoform Gauze** is introduced in the vagina, and the abdominal incision is sutured. The operation lasts from thirty to thirty-five minutes.

Dr. W. E. Ford[4] advocates the use of clamps in the removal of the uterus by the vagina.

Abdominal Hysterectomy.—At a recent meeting[5] of the British Gynæcological Society, Mr. Bowreman Jessett read a paper on this subject. He pointed out that the methods of performing the operation might be divided into three classes: (1,) Extraperitoneal method of dealing with the stump by the use of Koeberlé's clamp; (2,) The subperitoneal method of dealing with the stump after removal of the tumour; (3.) Total extirpation. The objections to the extraperitoneal and subperitoneal methods were discussed. By total extirpation of the whole organ all these objections were overcome, and the author submitted certain operative details which he had carried into practice with the most satisfactory results. Hitherto, operators after removal of the entire uterus with its tumour had laced or stitched the two peritoneal surfaces of the flaps together across the pelvis, thereby restoring the floor of the abdominal cavity. Difficulty hitherto had been experienced in opening up the roof of the vagina, some accomplishing this *per vaginam*, others by having an assistant's finger passed into the vagina. To overcome this difficulty, Mr. Jessett had had a bivalved speculum made, two inches long, which an assistant passed into the vagina when the tumour was delivered through the abdominal wound; by having this instrument pushed well home the roof of the vagina was put upon the stretch, and it was easy after the anterior and posterior flaps were reflected from the tumour to cut down upon the ends of the blades before and behind, and then to ligature the uterine arteries on each side; by dividing the tissues between these ligatures and the cervix the uterus and tumour were lifted out. By lacing the flaps across there was a large raw surface left, which would, or might, be a source of septic trouble afterward. To overcome this he proposed that long loops of silk, some four to six in number, should be passed through these flaps at their edge, so that the knot was made to come out through the speculum in the vagina by catching the loop in a specially made instrument. When all these loops were passed they were drawn taut, and the peritoneal flaps were in this way everted and doubled upon themselves into the vaginal roof. The vagina was then packed with strips of iodoform gauze, the speculum withdrawn, and the abdominal wound closed. All the patients on whom Mr. Jessett had performed this operation had convalesced easily and well; in fact, just as after an ordinary ovariotomy or vaginal hysterectomy.

Christopher Martin,[6] of Birmingham, reports eight cases of complete removal of the uterus by abdominal section, all the patients recovering

REFERENCES.—[1] "Journ. de med. de Paris," Jan., 1896; [2] "Zeitsch. für Geb. u. Gyn.," Bd. xxx, Heft. 2; [3] "Univ. Med. Journ." (Abstract); [4] "Amer. Gyn. and Obstet. Journ.," Feb., 1896; [5] "Med. Record.," Feb., 1896; [6] "Brit. Med. Journ.," Feb., 1896.

VAGINITIS.

Synopsis.—(Vol. 1896, pp. 60 and 287.) **Sodium-fluoride Solution**, ½ to 1 % locally. **Formol**, a tablespoonful of 10 % solution to 1 litre of water, as injection.

VARICOSE ULCERS. *P. G. Unna, M.D., Hamburg.*
Norman Walker, M.D., Edinburgh.

Carter Cole,[1] in a paper entitled "Ulcers of the leg, all can be cured," gives some good directions for treatment. First, he says that a thorough washing with soap and water, and a good scrubbing with a stiff nail brush should be employed. Then the ulcer should be **Curetted** thoroughly, the edges freed from their attachment, and the hæmorrhage checked by the application of a pad of gauze wrung out of 2 per cent. carbolic. The ulcer is now in a healthy condition, and is then strapped with **Diachylon Plaster**, covered over with absorptive gauze. Sometimes skin grafting is useful, but he does not greatly favour it. If the granulations become exuberant, the ulcer should be lightly brushed over with a solution of caustic, a drachm to the ounce. He believes that the rubber bandage does more harm than good.

Alfodi[2] washes the ulcer with 1 per cent. **Quinine**, which is, he says, very efficacious.

Coffin[3] recommends the **Tincture of Aloes** in this condition. It is applicable to all forms of ulceration. The ulcers must be cleansed, and hypertrophic granulations removed. Small ulcers up to the size of a crown piece heal rapidly. In the larger ones grafting is necessary. The application is momentarily painful. The tincture forms a crust, under which the wound heals.

REFERENCES.—[1] "Amer. Med. and Surg. Bulletin," Oct. 15, 1895; [2] "Therap. Gaz.,"; [3] "Journ. de mal. cutan.," Jan., 1896.

VEINS (Varicose).

Synopsis.—(Vol. 1896, p. 624.) **Delore** advises injection of **Iodo-tannic Solution** to cause slight phlebitis.

VERTEBRÆ (Acute Osteomyelitis of the).
William Thorburn, F.R.C.S.

Makins and Abbott[1] give an admirable account of this rare condition, which has only recently been recognized, twenty-one cases only having been recorded, of which eight occurred under the observation of the writers. From a consideration of this material they arrive at the following conclusions :—

The disease is more common in the male sex, in the proportion of 11 to 4; most frequent in the first half of the second decade, it is found from infancy to the twenty-seventh year, one patient being aged forty-six, so that omitting the last exception, it may come on at any time during ossification of the vertebræ. Any region of the spine may be attacked, but the lumbar vertebræ are especially prone to the disease: the arches are more commonly involved than are the bodies of the bones. Abscess formed in every case, being anterior or posterior to the spine according as the disease was situated in the body or laminæ; whereas in cases attacking the transverse processes it spread both backwards and forwards. Curvature of the spine was observed twice only, and was slight and transient, the rapid course of the disease and the necessary confinement to bed preventing serious deformity.

The cord or meninges were involved in more than half of all cases, there being sometimes only an extra-dural collection of pus, sometimes general suppurative meningitis, sometimes acute meningo-myelitis. Cerebral meningitis or abscess may arise from extension or metastasis. In 60 per cent. of the cases secondary foci of suppuration followed, all of these proving fatal.

The general pathology and symptoms do not differ from those of acute osteomyelitis elsewhere, and the development of the abscess is usually the first distinct evidence of the exact site and nature of the disease. In lumbar cases we have formation of acute psoas abscess, which is often bilateral, and this is frequently accompanied by much abdominal distension and symptoms which lead to a mistaken diagnosis of peritonitis or of typhoid fever. The first definite group of symptoms may be those of acute meningo-myelitis. With regard to diagnosis we are told that:—

"The difficulty of recognizing these cases is undeniably great, as may be judged by the fact that they have been mistaken for enteric fever, pneumonia, peritonitis, Landry's paralysis, acute spontaneous spinal meningitis, etc.

"It should, however, with the accumulation of experience, become somewhat less difficult, and the following points may be suggested:—

"In the first place, the history and general condition of the patient is usually such as at any rate to suggest the possibility of acute bone mischief, and to this may be usually added the cardinal sign of disease of the vertebral column, rigidity either general or local, and the tendency of the patient to assume and maintain the supine position. Later, local swelling, with the special diffuse character already emphasized, with gradual tendency to circumscribed softening, will be a valuable aid in all neural arch cases. Especial care must be

exercised in sifting abdominal symptoms, for the pain, tenderness, and distension naturally first point to visceral inflammation, and can only be utilized for this disease in connection with rigidity of the spine, or some evident signs of local inflammation in the back. With regard to the diagnosis from enteric fever, it should also be pointed out that enlargement of the spleen is usually present in acute infective osteomyelitis, so that this sign is of little diagnostic utility.

"Signs of meningitis and myelitis are, on the whole, of decided importance in forming an opinion, firstly, because this disease is probably one of the commonest, if not the commonest, cause of acute inflammation of the cord and membranes, and, secondly, because as a rule, they do not appear until the other symptoms are well marked. In connection with the possibility of confusion with Landry's paralysis, the enlargement of the spleen in either disease must again be borne in mind.

"Secondary deposits, which often occur early, especially in other bones, and the skin giving rise to pustular eruptions, may also be aids to the formation of a correct opinion, or the revision of an earlier erroneous diagnosis in the later stages."

The prognosis is exceedingly bad, the mortality being 71·4 per cent., the duration of life averaging twenty-five days from the time of onset. The most serious cases are those involving the bodies of the vertebræ, the arches being more accessible to early evacuation of pus and removal of sequestra, although extension to the interior of the vertebral canal is more common in the latter cases. Treatment consists essentially in early evacuation, the prompt removal of sequestra being especially important.

REFERENCE.—[1] "Annals of Surgery," May, 1896.

VULVA (Kraurosis of). *Theophilus Parvin, M.D., Philadelphia.*

Herman[1] regards as the best treatment of this affection, the use of sedative vaginal injections, such as **Lead** or **Boric Acid**, and dusting the vulva with sedative powder, such as boric acid or **Dermatol.** By this treatment the patient is usually made comfortable, if not married. Should this treatment fail, or if the patient were married, the only method was to excise the tender and shrunken surface. He had done this in one case successfully.

REFERENCE.—[1] "Lancet," Dec. 7, 1895.

VULVO-VAGINITIS (in Children).

Theophilus Parvin, M.D., Philadelphia.

Agramonte,[1] having had under his care at Bellevue Hospital thirty-three cases of vulvo-vaginitis, objects to medicine by the mouth,

unless it be a mild diuretic, like citrate of potash, or remedies for some dyscrasic condition. The local treatment is simply flushing the diseased parts with a solution of **Permanganate of Zinc** or **Potassium,** zinc preferred, in a solution of 1 to 3000. A soft rubber tube, of appropriate size for the patient, is inserted one or two inches, and the other end being connected with a fountain syringe or by siphon with an ordinary bottle (the reservoir being twelve to eighteen inches only above the level of the table) the fluid enters the vagina. The vulval orifice is compressed at intervals to produce distension of the vaginal walls, and thereby allow the liquid to come in contact with every portion of the inflamed area. The patients were cured in an average of twelve and one-fifth days, except two who had cystitis as a complication; in one of these five and in the other eight weeks were required; the cystitis was treated by irrigation with a solution of the permanganate of zinc, 1 to 6000.

REFERENCE.—[1] "Medical Record," Jan., 1896.

WARTS. *P. G. Unna, M.D., Hamburg.*
Norman Walker, M.D., Edinburgh.

Kaposi recommends sulphur 5 drachms, glycerine 1½ drachms, acetic acid 2½ drachms. To be applied daily.

WOUNDS. *Priestley Leech, M.D., F.R.C.S.*

Disinfection of Wounds.—For some years a certain number of surgeons, more particularly those of Germany and Russia, have questioned the use of antiseptic solutions for the disinfection of recent wounds.

Zeidler[1] says that the use of antiseptics in infected wounds is of no benefit. He gives the results of his treatment in such wounds by aseptic methods, and quotes the work of Schimmelbusch, Reichel, and Hänel. This method of treatment has not found much favour in England, and experiments have been conducted by Henley,[2] which go a long way to disprove Schimmelbusch's conclusions. Schimmelbusch used the anthrax bacillus as the germ of infection in mice, and proved that the disease once inoculated ran identically the same course, whether the seat of inoculation was disinfected or not. The action of anthrax bacilli is, however, quite different from that of the ordinary pus-producing cocci. The streptococcus has a much more local action, and remains localized unless present in great numbers, or of extreme virulence. Henley used the streptococcus obtained from erysipelas and phlegmons in human beings, and inoculated the ears of guinea pigs. Both ears were inoculated, one ear was left untreated, and the other was washed with 1 in 1000 **Perchloride Solution** at

varying intervals after inoculation. The results proved the value of antiseptics. The disinfected ear remained without reaction, and even where cleansing was not attempted for eight hours erysipelas did not develop, or, if it did, was milder and slower in its course. He found that if bichloride is carefully employed three hours after infection with a most virulent form of streptococcus, the wound remains reactionless.

Treatment of Aseptic Wounds.—Dr. Mackenzie[3] describes a somewhat novel method of treating wounds without the use of expensive dressings.

The first essential for the healing of wounds is to retain the parts at rest, and the parts that are to be united in close and constant apposition. This is effected by the use of buried cat-gut suture, by means of which the deep parts of a wound, whether that of an amputation of the leg or of the breast, are brought together and held in place. After the deep sutures have been systematically inserted, the skin edges come easily together, and are retained in apposition by a continuous cat-gut suture embracing but a small extent of the cut edges of the skin. After the wound is thus closed, a solution of celloidin is applied over the line of skin incision, and for half an inch on either side. This solution quickly dries, leaving a thin transparent film that adheres to the skin with great tenacity, and is yet sufficiently plastic to adapt itself to the wrinkles and inequalities of the skin produced by movements of the parts. Often one painting is sufficient to cover the part long after the wound has healed. The solution used is made by dissolving 1 part of celloidin in 4 parts each of absolute alcohol and sulphuric ether. This solution quickly dries in the bottle, and equal parts of alcohol and ether can be added from time to time to produce a solution of the consistence of glycerine. Celloidin will not set in the presence of water; Dr. Mackenzie therefore covers the wound for a few minutes with a piece of lint saturated in carbolic solution until the patient is made comfortable in bed, when the oozing from the stitches will have ceased. The wound and surrounding skin is then carefully dried, wiped with a piece of lint dipped in rectified spirit, and then with absolute alcohol. While the part is still moist with the alcohol the celloidin is painted on. As this dries it contracts, and drags upon and compresses the skin, so that all oozing is stopped. No bandages or dressings are required.

In certain cases it is desirable to get rid of effused blood, which is often poured out when reaction takes place from the chloroform and operation. The following method is employed: Before the wound is closed a small hole is made at the most dependent part of it, as far

away from the skin incision as possible. An unperforated piece of drainage tubing rather larger than the hole in the skin is then passed into the wound; the tubing is used larger than the hole so that it may be firmly gripped by the skin. The wound is then closed, and the tubing is introduced into a bag made of gutta-percha tissue containing a sponge soaked in a strong antiseptic. The mouth of the bag is closed on the tube by softening the edges near the tube with chloroform. The drainage thus takes place into a hermetically sealed antiseptic receptacle. Twenty-four hours after the operation the tube is removed, and the opening plugged with antiseptic gauze. If the wounds are not aseptic, and there is no chance of healing by primary intention, this method is not applicable. Should the wound be treated in the above manner, and become septic, it is still applicable, as a wound seldom suppurates in its whole length. Suppose a rise in temperature, and a red blush round the wound, a piece of the celloidin is picked off with a probe, and the probe inserted between the edges of the wound, and if pus is present it oozes out, and may be drained.

This method appears very suitable for wounds in the face.

Williamson[4] recommends a solution of celloidin in small cuts, punctures, and excoriations, especially on the hands. It is also useful in the fissures and cracks which form on the hands and fingers of some persons in cold weather; it dries soon, forms a coating which adheres for several days, and when it comes off, as a rule, the fissures are healed. It adheres more firmly, and lasts longer than collodion. The parts to which it is applied must be thoroughly dry. The best strength of solution to employ is 2 parts of celloidin to 15 of absolute alcohol and 15 parts of pure ether, sp. gr. 720; ether of sp. gr. 735 must not be used, as it does not adhere to the skin so well.

Suture of the Heart.—Cappelen[5] reports the following case: A man aged twenty-four, some hours before had received a stab from a knife in the left side. He went home alone, and about an hour afterwards was found lying in a pool of blood. On admission he was unconscious; the pulse could not be felt; the cardiac impulse could not be felt, but pure, though weak, heart sounds could be heard to the right of the sternum, on a level with the fourth rib. In the fourth left intercostal space in the mid axillary line, parallel with the rib, was a punctured, non-bleeding wound, 1 cm. long.

After a camphor injection the patient began to breathe, and the pulse could be felt. The left side of the chest did not move in respiration. Under chloroform narcosis a resection of the fourth rib was made after enlarging the wound. The pleural cavity was filled with blood, partly fluid and partly coagulated; this was evacuated, when

the lung dilated and was found uninjured. After resection of 5 cm. (1¾ inches) of the third rib, a wound 1 cm. long could be seen on the pericardium bleeding freely. The sac was filled with coagula and, on enlarging the opening a wound, 2 cm. in length was seen on the left ventricle causing the bleeding. The wound was sutured and an artery tied, after which the hæmorrhage ceased. The needle was brought half-way through during a contraction, and then dropped, and when the heart dilated after a second contraction the point was grasped and the needle brought completely through. The suturing was made very difficult by the rhythmic movements of the lung, which covered the whole operating field, and by the heart contractions, which, however, were perfectly regular and quiet all the time. The pericardial cavity was emptied of clots as far as possible. The pulse after the operation was very quick and feeble, but improved after a subcutaneous saline injection. The patient sank gradually, and died two and a half days after the operation. At the necropsy it was found that a large branch of the coronary artery had been wounded; the wound had begun to heal, but there was evidence of pericarditis, and various bacteria were found in the fibrinous exudation. The knife had passed through the pleura in front of the lung without wounding it, and again through pleura and pericardium into the heart.

Suture of Arteries.—Haidenhain,[6] at the Meeting of the Berlin Medical Society, speaks of the suture of wounded arteries. He wounded the axillary artery, and sewed up the wound successfully with cat-gut stitches.

Glück[7] speaks of v. Zoege Manteuffel having sewed up a wounded femoral artery with success; and Israel sewed up a wound in the common iliac artery; he used five fine silk sutures. No fear need be felt about arterio-sclerosis, as one patient was fifty-nine years old, and the result was good.

REFERENCES.—[1] "Centralblatt f. Chir.," No. 14, 1895; [2] "Archiv. für klin. Chir.," vol. xlix, 4th section, quoted in "Therap. Gaz.," July 15, 1895; [3] "Brit. Med. Journ.," Feb. 1, 1896; [4] Ibid., April, 1896, p. 968; [5] Ibid., Epitome, May 23, 1896; [6] "Centralblatt f. Chir.," 1895, p. 1113; [7] "Berlin. klin. Woch.," 1895, p. 746.

WOUNDS OF THE EYE (Penetrating).

G. E. de Schweinitz, M.D.,
Clarence A. Veasey, M.D., } *Philadelphia.*

Bryant[1] suggests that there are several general rules that can be laid down for the treatment of these cases that will apply to all, and that special rules must be adopted for special cases.

The general rules suggested are as follows: The injured parts and

the conjunctival sac should be thoroughly cleansed with boiled water, with, or without, the addition of boric acid or bichloride of mercury. Loose fragments of the cornea must be removed and the lips of the wound approximated as nearly as possible. If the iris protrudes and is not injured, it is cleansed as well as possible and carefully replaced in the anterior chamber with a probe or spatula. If this cannot be done the prolapsed portion is excised. If the protruding portion is lacerated, it should be cut off with the scissors at once. If the wound is near the centre of the cornea, atropine is instilled sufficiently often to keep the pupil dilated. If the wound is near the periphery of the cornea, a solution of eserin or pilocarpine should be used to contract the pupil for twenty-four to thirty-six hours, when atropine should be substituted to prevent, as far as possible, an iritis. If the lens or deeper structures are involved, the same treatment should be followed to place the case in as favourable a condition as possible for the further treatment which will be required.

After the above directions have been carried out a gauze bandage over a light pad of cotton is applied, and in all cases, except the very mild, cold is applied by means of a small ice-bag. Pain is relieved and sleep secured by means of morphia, if required.

In the treatment of *corneo-sIceral wounds*, accompanied by persistent prolapse of the iris, one of us (Dr. de Schweinitz[2]) has proposed the employment of **Sutures** for closing the wound after the excision of the prolapse. Very delicate silk has been used for the purpose and the sutures are removed on the fourth or fifth day. Excellent results have been obtained by the method.

An opportunity for the clinical observation of one of those comparatively rare cases of *blood-staining of the cornea* recently occurred in the authors' service at the Jefferson Medical College Hospital, and was later recorded by Dr. de Schweinitz.[3] The patient was a little girl, aged three and a half years, who had received a wound at the corneo-scleral junction of the right eye from a pair of sharp scissors, through which there was an extensive prolapse of the iris. The anterior chamber was filled with blood. After excising the prolapsed portion of the iris, a pressure bandage was applied and the child put to bed. In twenty-four hours partial absorption of the hæmorrhage had taken place, but as the child was exceedingly restless and very difficult to manage, succeeding hæmorrhages occurred, so that when she was dismissed from the hospital three days later, at the request of her parents, the anterior chamber was so full of blood that the underlying tissues could not be seen. A week later there was a distinct attack of cyclitis which, in spite of an attack of measles in the meantime,

entirely disappeared. As early as the tenth day, and increasing for some time thereafter, the cornea began to assume a greenish-brown colour, with the exception of a very narrow rim about 2 millimètres wide, at its circumference, so dense that the underlying tissues could not be seen, and looking not unlike a dislocated lens in the anterior chamber. Though the case has been under observation several months no change has been noticed in the condition of the cornea.

In conjunction with wounds of the cornea it is interesting to note that in a case[4] of *post-operative panophthalmitis* occurring in the wards of the same hospital, cultures being made from the sloughing material in the centre of the vitreous by Dr. D. Braden Kyle at the request of Dr. de Schweinitz, there was isolated "a rod-like *bacillus*, uniform in size and slightly rounded at the ends, which stained easily with any of the aniline dyes, but best with methyl-blue." The pathogenic character of the bacillus was tested by injecting emulsions of the surface growth on agar in beef broth into rabbits' eyes with entirely negative results. Injections of a mixed culture, however, which contained cocci that were also present, produced suppuration.

REFERENCES.—[1] "Omaha Clinic," Nov. 1895; [2] "Transact. Philadelphia County Med. Soc.," March 11, 1896; [3] "Philadelphia Polyclinic," Sept. 5, 1896; [4] Ibid., Sept. 5, 1896.

PART III.—MISCELLANEOUS.

Sanitary Science, 1896.

BY JOSEPH PRIESTLEY, B.A., M.D., D.P.H.,
Medical Officer of Health, Lambeth, London.

PRACTICAL SANITATION.

Were all sewers perfect as to ventilation, gradient, construction, etc., there is little doubt but that disconnection of house drains would not be necessary. Considering, however, the more or less defective state of sewers, there are two principles in sanitary engineering about which there can be, and practically is, little difference of opinion, viz., the absolute necessity of disconnecting all house drains from sewers, and seeing that all drains and sewers are efficiently ventilated. The disconnecting (or siphon) water trap that is generally used may form an impediment to the passage of the waste products along the house drain, and may, in consequence, give rise to stoppage and subsequent back floodings of sewage matter near to, or underneath, houses, so that it becomes necessary to provide some means by which such intercepting traps can be readily got at and cleared when necessary. The man-hole, or inspection chamber, built round the trap is undoubtedly the most satisfactory, but its expense has caused many different suggestions to be made from time to time, and during 1896 some such suggestions have been made in the form of patented sanitary appliances. Thus, Messrs. Hyde & Co., of Kennington Cross, London, have brought out the "Cosmo" plunging eye, for use with intercepting traps, access pipes, bends, etc. (*Figs.* 64, 65). A plunging arm of an intercepting trap is brought up to the surface of the ground and then fitted with the "Cosmo," the frame of which is cemented into the socket of the pipe forming the plunging eye, and the cover fitted thereon by a perfectly secure and gas-tight joint obtained as follows: A rotatory movement of the cover to the right,

Fig. 64.

Fig. 65.

applied by a common water key, wrench, or similar instrument, causes the two small lugs that are cast on the underside of the cover to engage with two others cast on the frame, the channel having been previously filled with grease. The locking arrangements being thus in a deep grease channel, it is practically impossible for the joint to become set, whilst to release the connection, all that is required is to reverse the above movement and the cover will be found to ride up on to the frame, giving every facility for lifting it off. The cover is made in galvanized cast-iron and has no holes in it, and requires no special key to open it.

The appliance is useful, too, for bends and junctions.

The principle of endeavouring to have every point of a drainage system easily get-at-able without having to break up the ground, has given rise to the so-called "standard access pipes" of Mr. P. Mooney, of 3, Clarence St., Manchester. Mr. Mooney claims that his pipes do away with the necessity for expensive man-holes being built at different points, whilst at the same time ample means are supplied by which any point of the drainage system can be easily commanded in the event of stoppage, etc. The principle is a simple one and applicable to bends, junctions, traps, and ordinary straight pipes, as the above diagram (*Fig.* 66) will show :—

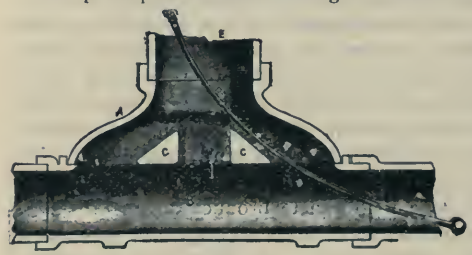


Fig. 66.

A cover is fitted on to a pipe and supported by two strong earthen-ware guides, which form part thereof, and a vertical shaft which is continued to the ground level. A rod can be readily passed down the vertical shaft and then turned, right or left as required, along the guides, making a simple but effective means of unstopping a drain.

Fig. 67.

Messrs. Hyde & Co. have also patented a reversible gully called the "Verto" (*Fig.* 67). It is in two pieces, so that the outgo can be turned

to any angle, whilst the top can be set square to brick work. Further, by inserting a short length of 6-inch drain pipe between the two pieces, the height can be increased as desired—a great advantage with old work. The body is made with various inlets to take rain-water pipes, sink wastes, etc.

A similar principle has been applied to the intercepting trap by Mr. Mooney, of Manchester, who has patented his "Union" adjustable intercepting trap, which is useful where the main house drain differs in direction from the frontage, *i.e.*, the portion of drain between the man-hole and the sewer. From the diagram (*Fig.* 68) it will be seen that the adjustable piece at the top of the trap can be turned in any direction so as to avoid the necessity of bends or extra man-holes in the course of the main house drain when the latter is not in an exact straight line with the drain from the man-hole to the sewer.

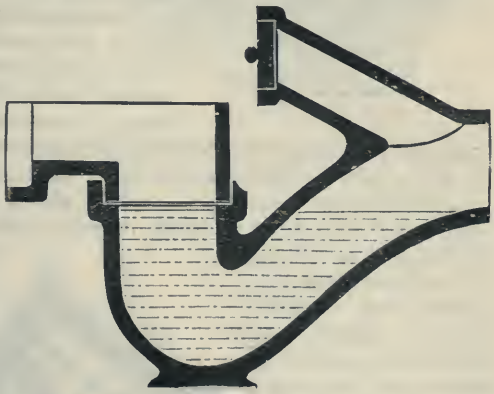


Fig. 68.

The intercepting trap in connection with a man-hole has had considerable attention, too, from other Sanitary Engineers during the year, but they have limited their attentions to the stopper of the "raking," or sewer, arm, which leads from the man-hole to the part of the drain which passes from such man-hole to the sewer. The usual way is to cement an earthenware, or stoneware, or even glass, stopper, into the end of this "raking arm"—an arrangement necessitating the breaking of the joint before the rods can be passed down this sewer arm. To avoid the breaking of this joint, a screw stopper, or plug, has been patented by Mr. Sykes, and brought out by the Albion Clay Company, of 18, New Bridge Street, London, and Burton-on-Trent. It effectually seals up inspection arms of interceptors, or sewer junction pipes, and every kind of inspection eye, being made air- and water-tight by placing a good fillet of Russian tallow in the socket before screwing the plug up ; whilst in this way the stopper cannot be blown or forced out by pressure in flood times, or from other causes (a condition of

things that occasionally takes place in connection with the ordinary stoppers), though it can be easily unscrewed and replaced without breaking the joint or socket.

The diagram (*Fig.* 69) shows the screw fitted to the "raking," or sewer, arm of an intercepting trap in a man-hole. In the event, however, of the man-hole being (say) half filled with sewage, owing to a stoppage in the trap or other cause, it is clearly impossible to reach this stopper either for the purpose of breaking or unscrewing it, unless a workman descends into, and immerses himself in, the sewage in the man-hole. How is this difficulty to be overcome? This is a question that has been answered during the year. Thus, Mr. John Mitchell, of Drury Lane, London, has patented his "Mitchell's Valve," consisting of a cast-iron or gun-metal ring, or socket, cemented into the mouth of the clearing arm, and (attached by means of a knuckle hinge) a heavy flap valve in the form of a flanged taper plug—the plug being fitted with a projecting sheath, or ring, of flexible material (generally rubber), so that when it is dropped into place, a sound joint is instantly made. Should the chamber become flooded, the valve can be opened by means of the chain shown (*Fig.* 70), or, in the absence of the chain, a crooked stick will do almost as well. A clearance can then be effected without a man descending into the chamber, and afterwards, the flap, by its own weight, will again fall into position, and the joint be as sound as ever. Even where this valve is blown out, it will immediately re-close itself. Further, the iron portion of this appliance is galvanized, and the knuckle fitted with a copper pin, so that it is, as far as possible, protected from corrosion.

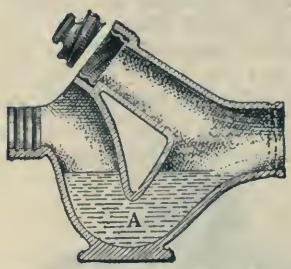


Fig. 69.

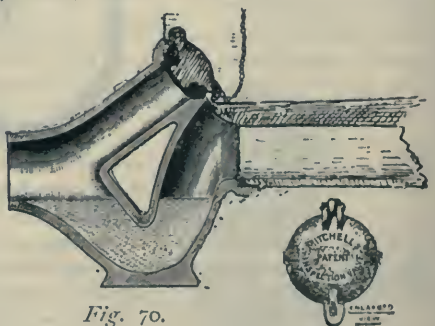


Fig. 70.

Mr. John Jones, of Chelsea, London, has also patented a stopper for the clearing, or "raking," arm of an intercepting trap with man-hole

(*Figs.* 71, 72). The frame of the stopper is cemented into the socket of the clearing arm, and the closing, or stopping, plate is firmly and securely fixed in position by means of a simple lever, and when closed, is absolutely air-tight, whilst the strongest back pressure will not blow it out. A chain is attached to the end of the lever and carried up to the under side of the man-hole cover; and by this means, should the trap get choked and the inspection chamber, in consequence, gradually fill up with soil, all that is required is to take off the man-hole cover and give a slight pull to the chain, thereby releasing the stopping plate and leaving the clearing, or "raking," arm open to take away the accumulated soil. The stoppers are made in brass or galvanized iron.

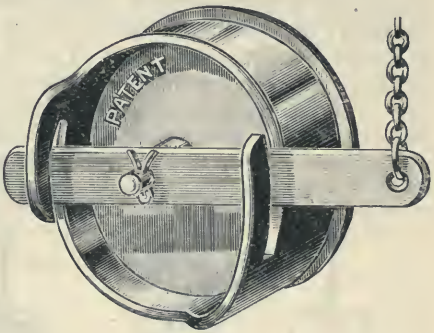


Fig. 71.

Before leaving the important question of intercepting drains from main sewers, and thus preventing sewer gas from entering houses, it may be well to repeat that all experience goes to show that an intercepting trap *per se* is a weak portion of a drainage system, being apt to become blocked unless provided with a frequent and heavy flush of water, and it has been suggested that perhaps a better method would be to use a patent iron flap-trap at the outlet of the house drain into the sewer, thereby preventing not only sewer gas from getting into the house drains from the sewer, but also rats, flood water, and solid particles. Flaps have been hitherto used in connection with sewers, but the Walker Sewer Valve Company, of Oakley Square, London, have recently introduced such a trap for house drains, which

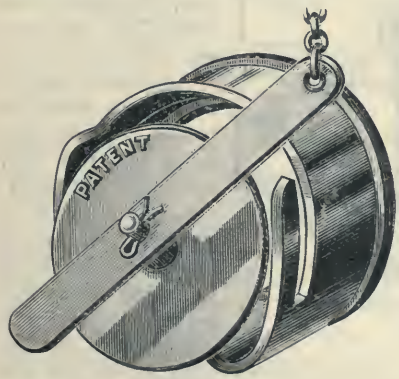


Fig. 72.

is found to be efficient and cheap. It is used also for the trapping of street gullies, and is stated by the inventor to "stand good for nearly a century," the frame and flap being of iron, and the flap not being liable to fall out like the stoneware frame flap valves, owing to the wearing away of the pins—a condition of things all the more to be regretted from the fact that, when the pins do wear away, a new frame is necessary in this latter case. The Walker Sewer Valve is now being used by the London County Council, the St. Pancras Vestry, etc., in this country, and also in America, France, Belgium, etc. The fixing of the valve does no injury to the structure of the sewers, whilst the bolts, or pins, can be renewed as required at a very trifling cost each, and require no skilled labour in fixing.

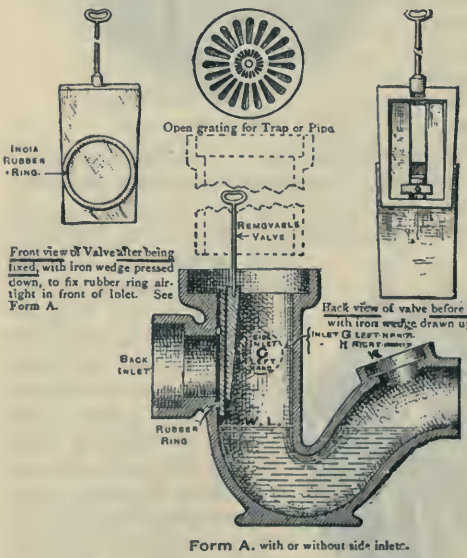
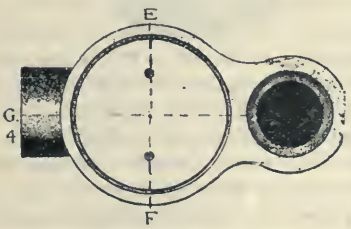

Open grating for Trap or Pipe
INDIA RUBBER RING.
REMOVABLE VALVE
Front view of Valve after being fixed, with iron wedge pressed down, to fix rubber ring air-tight in front of Inlet. See Form A.
Back view of valve before fixing with iron wedge drawn up.
BACK INLET
RUBBER RING
W. L.
Form A. with or without side inlets.

Fig. 73.

Amongst other sanitary appliances we may notice a new sewage gas trap, a patent drain trap for flushing and water testing. It is the invention of Mr. W. Keith, and is brought out by the Albion Clay Company. The patent is specially designed to provide a simple and convenient mode of testing drain and soil pipes by water, with respect to the tightness of the joints or possible escape of noxious and offensive gases, and also for the purpose of effecting flushing, and for disinfecting drains. It can be supplied to any drain or vertical soil pipe, and be worked by any ordinary person. The trap is provided with a removable slide, or sluice, hand-operating valve which can be opened or shut as desired when the horizontal drain or vertical soil pipe is required to be tested or flushed, after which the slide valve is entirely removed, and the cleansed drain allowed to resume its ordinary

working. The accompanying drawing (*Fig.* 73) fully illustrates the design and working of the trap. It is stated to be a distinct improvement on the present method of testing horizontal and drain soil-pipes by smoke or other vapour tests, which necessitate the application of complicated portable appliances for the forcing of these tests through the pipes, and which never reveal badly-jointed pipes when these are covered over with earth. The patent is a simple and effective one, and the top of the trap is made either round or square, whilst the trap itself is in 4-in., 6-in., or 9-in. sizes.

The Albion Company have also brought out during the year a new rain-water or soil-pipe shoe, with easy access by means of an opening fitted with a screw stopper. The diagrams (*Figs.* 74, 75) explain themselves, and the patent will be found a useful one, bearing out what is every day becoming a well recognized principle in sanitation, viz. : the necessity of supplying free access to all parts of a drainage system.



PLAN.
Fig. 74.

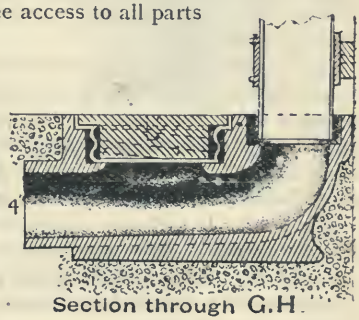


Fig. 75.

Mr. John Jones, of Chelsea, has improved his "Melbourne" valveless siphon flushing cistern, which was mentioned in last year's "Medical Annual" (see page 637), by modifying it in such a way that the whole cistern can be easily dismantled and the fittings packed securely inside, leaving no lugs or projections to be snapped off, and thereby saving largely also in measurement for freight—an important consideration where the cisterns are made for export trade.

Messrs. Duckett & Son, of Burnley, the well-known makers of the slop water-closets, have introduced during 1896 several new patents :—

(*a*,) The "Whirlpool" closet—a self-contained pedestal closet especially designed for artisans' dwellings and places where there is likely to be rough usage, *e.g.*, mills, schools, asylums, etc. ; the sides of the basin are nearly perpendicular, and the standing water area is therefore exceptionally large (about 11 inches diameter), and the

possibility of soiling is consequently reduced, whilst the flush is a powerful one.

(*b*,) An automatic combination urinal and closet—an arrangement designed for use in public places such as railway stations, markets, etc., and which has the merit of saving clean water and obtaining a regular and efficient automatic flush through both urinal and closet at the same time—the general plan being for a three-stalled urinal to be so arranged that the water used for flushing is utilized for the flushing also of two closets, this latter flush being supplemented by a one-gallon overhead flush to each closet.

(*c*,) A grease trap, which is furnished with a condensing tray which has the effect of cooling the grease before it enters the water in the trap, and which thus differs in principle from the ordinary grease traps which have their extractors set at the bottom, thus failing to retain the grease and only extracting that which may be floating on the top of the water.

(*d*,) The "secure joint," which is admirably adapted for sewers in water-logged ground when a continual stream of water is running through the trench during the operation of laying. On the spigots and in the sockets of the pipes a bituminous material is cast in rings by means of improved and patented apparatus, and in these cast rings grooves are formed so that when the spigot of the pipe is placed in the socket an annular groove is obtained into which cement is run so as to seal the joint. The cast rings have true bevelled surfaces which allow of easy fixing, and, when the groove has been filled with cement, a perfect key is made, which renders the joint not only strong but absolutely water-tight.

(*e*,) The A1 chimney pot, consisting of 16 vertical flues, each 1½ inches in diameter, surrounding the body of the smoke flue. The flues are uniform in section, only ½-inch apart, and convey an upward current of air from the outside, discharging inside the smoke flue a little below the top, thereby increasing the draught. The chimney pot is made of brown glazed earthenware, is of oval shape, and is said to be a cure for smoky chimneys.

Messrs. Duckett & Son have naturally improved their own particular patent, slop water-closets, *e.g.*, by getting over the difficulty of the soiling of the pans, thereby rendering the closets most sanitary, and useful for out-of-door purposes especially. The improvement is known as the "perfect" slop water-closet, and its basin is of the well-known annular form with the tangent inlet and central outlet, without the interposition of an extension pipe or pan, so that the trap can be reached with the utmost ease from the basin.

Messrs. Hosking & Sons, of Albert Embankment, London, have brought out a new mica inlet ventilating opening for drains (*Figs.* 76, 77). It is the patent of Mr. Simmance, and has many advantages over the old mica flap, which is apt to get out of order owing to the hinges corroding and preventing the valve either from shutting closely or opening freely. The advantages of the new patent are :—

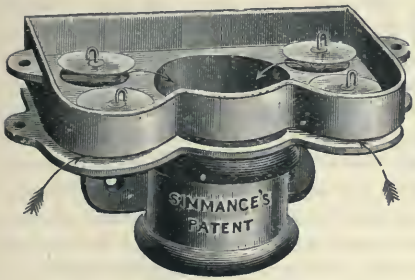


Fig. 76.

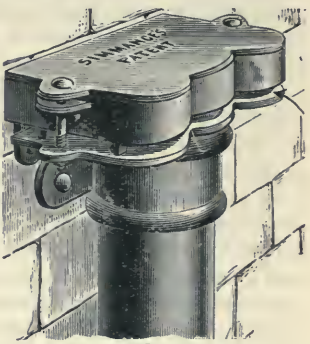


Fig. 77.

(1,) The valves cannot stick or become sluggish, but close accurately and open sensitively.

(2,) No mischievous persons can injure the valves, or thrust sticks, etc., into the drain.

(3,) No objectionable aperture is visible, so that this inlet can be placed anywhere without attracting undue notice.

(4,) It is easy to fix, cheap, soundly constructed, and always in order.

It is made in cast-iron with talc valves, aluminium centres, and non-corrodible metal spindles ; and a separate guard plate is added.

Messrs. Bright and Venning, of 102*a*, Victoria street, Westminster, London, have introduced a lead-lined iron pipe for use in domestic drainage. It is cheaper than lead itself and has the advantage of uniting the strength of iron with the durability, smoothness, and non-corrosiveness of the lead. The soil pipes can be fixed (1,) by nails through lugs, or (2,) by bracket and nut. The lead lining of the joints becomes fused with the molten lead poured into the iron socket, forming thereby a strong joint for both the inner and outer shell at half the cost of a wiped joint.

Messrs. Doulton & Co., of London, have introduced a new enamel of a vitreous nature which has all the advantages of a porcelain enamel, but is less liable to injury and is much cheaper in price. This new vitreous enamel is applicable to unprepared cast-iron articles,

such as baths, lavatories, closets, sinks, etc., a complete combination being formed between the enamel and the iron. It is made in various colourings, and will not fly or chip off.

Messrs. Doulton & Co. have also during the year made a distinct alteration in the waste of their baths, having the waste now exposed and easily removable for cleansing. The alteration is known as the improved roll-edge patent "combination" bath, with exposed and removable waste and overflow. By raising the waste pull and lifting the overflow pipe in an upward direction it can be readily removed. The inside of the overflow pipe and the trap are glass enamelled and are of 2-inch full bore, whilst the overflow channel passes through the centre of the waste plug.

A patent mortuary shell has been brought out by Mr. Birch at Myerson's Iron Works, 211, St. John Street, Clerkenwell. It is a simple contrivance, consisting of a galvanized iron shell, the lid fitting into a narrow groove some five inches deep and filled with water which thus hermetically seals the shell. On the centre of the lid is a tap, to which can be attached, or detached, a length of indiarubber tubing, through which foul air from the interior of the shell can pass into a chimney or through a window of a house or mortuary. There is, in addition, a glass "face piece" to enable the corpse to be viewed without any fear of infection. The weight of the shell is about ¾-cwt.

The drain tester mentioned in last year's "Medical Annual" (page 640) has been improved by the Sanitas Company, London, and is now for sale in a useful and convenient form. The tester in practice is found to be exceedingly useful for quickly discovering defects of drains, more especially inside houses, and may, with advantage, be recommended to householders.

Several new disinfectants have appeared during the year. Thus, Mr. Kühn, of 36, St. Mary-at-Hill, London, has introduced the chinosol germicides, consisting of:—

(*a*,) Chinosol fluid (10 p. c. solution)—a germicide and deodorizer, which is stated to be forty times more powerful than carbolic acid, and ten times more effective than $HgCl_2$ solution, in its bactericidal action.

(*b*,) Crude chinosol in lumps for making solutions for general disinfection and deodorization, and containing on analysis 2 to 3 per cent. inorganic matter and the rest pure chinosol. The crude chinosol can be used in water carts for street watering, or sewer flushing, the strength to be used being 2 ounces to 250 gallons of water, at a cost of less than 2/- each time.

(*c*,) Yellow crystalline chinosol powder and tablets.

Chinosol belongs to the chinoline series, and is a chemical compound

of chinoline and oxychinoline. In the strength of 1 in 200 it is a deodorizer and germicide, and contains neither soapy nor resinous ingredients, but dissolves clear and leaves no slippery surface; further, it is non-poisonous, non-corrosive, does not coagulate albumen, and is readily soluble.

The British Electrozone Corporation, Limited, of Trafalgar Buildings, Charing Cross, London, have also introduced two new disinfectants—one for ordinary disinfecting purposes called electrozone, and one for medicinal uses called meditrina. The latter is simply a concentrated and chemically pure preparation of the former. Both are said to be deodorants, disinfectants, and germicides, without any poisonous properties or other dangerous qualities, and are products of sea water and electricity. The electric current is passed through sea water and acts upon the chlorides forming hypochlorites of sodium, calcium, magnesium and potassium, whilst the iodine and bromine (found in sea water) are also acted upon. In each gallon of the preparation there are 670 to 760 grains of combined chlorine as chlorides, and 375 to 395 grains of chlorine as hypochlorites, and capable, therefore, of being liberated, *e.g.*, by the action of acids, as stated by the public analyst for the county of Essex. The disinfectant action depends upon the fact that hypochlorites brought into contact with organic matter give off nascent chlorine, which unites with the hydrogen of the organic matter, thus destroying it by molecular disintegration; ozone, nascent oxygen, and peroxide of hydrogen being also formed (*vide* "Medical Annual," 1894, p. 595).

The Red Cross Company, Limited, of 61½, Fore street, London, have introduced the red cross germicides—anthrolin and excelsior, which are stated to be the cheapest and most perfect deodorants and detergents; and a pleasant deodorant called "the perfume germicide."

The Sanitas Company, of Bethnal Green, London, have introduced a new disinfectant called "Okol." It is a greyish emulsion, not unlike Izal in appearance, and is particularly adapted for use by Sanitary Authorities. The same Firm has introduced pellets of permanganate of potash and carbolic acid during the year, and these pellets will be found to be exceedingly convenient—the permanganate ones containing 5 grains each, and forming a convenient and powerful disinfecting solution in the proportion of one pellet to a pint of water, and the carbolic ones containing 2 grains each, and forming a useful solution in the proportion of one pellet to half-a-pint of water; whilst the "Sanitas" moth papers are said to be an excellent protective against moths in clothes, rugs, carpets, furs, etc., the smell of the disinfectant being readily removed by exposure to the air for a short time.

GENERAL REMARKS.

Small Pox and Vaccination.—It is a strange coincidence (let us hope it will bear fruit) that the year 1896, which has seen the hundredth anniversary of the discovery of vaccination (the Jennerian centenary) has also witnessed a serious epidemic of smallpox in the great centre of Anti-Vaccination—Gloucester—and the issue (at last!) of the final report of the Royal Vaccination Commission. It was on May 14th, 1796, that Edward Jenner vaccinated the first child (James Phipps, aged 8 years) with vaccine taken from Sarah Nelmes, a dairymaid infected with the cowpox, with the result that variolous matter from a smallpox pustule was inoculated, *without effect*, into the same child six weeks afterwards (*i.e.*, on July 1st). A hundred years elapse, and now a Royal Commission reports, practically unanimously, to the following effect :—

(1,) The marked decline of smallpox mortality in the first quarter of the present century (*i.e.*, after the discovery and introduction of vaccination) affords substantial evidence in favour of the protective influence of vaccination (*Sect.* 85), and it is scarcely possible to deny that, speaking generally of the British Isles, a more vaccinated population has exhibited a diminished mortality from smallpox (*Sect.* 144), and it cannot be asserted, when all the circumstances are considered, that sanitary improvements afford an adequate explanation of this diminished mortality (*Sect.* 153); especially remembering that sanitation has had little or no effect in measles, scarlet fever, whooping cough, and, indeed, any disease spread by contagion or infection and from which recovery was possible (*Sect.* 154).

(2,) A study of the age incidence of smallpox mortality is very instructive and may be represented as follows (*Sections* 168-174) :—

Death-rates in England and Wales from smallpox per million living during the seven years 1848-54 and for each decennium since :—

	Under 5 years.	5-10	10-15	15-25	25-45	45 and upwards.
1848-54	1514	323	91	110	69	24
1855-64	788·8	209·5	68·7	118·9	87·8	36.2
1865-74	782·5	333·2	142·3	267·2	220'7	87.5
1875-84	127·8	62·9	46·4	82·4	76·6	33·9
1885-94	50.2	14·9	11·1	24·0	31·6	19·0

The above statistics agree with those more recently collected which show that in Leicester and Gloucester, where the child population was very ill-vaccinated, the proportion of smallpox deaths borne by that class was very large; whilst in Warrington and Sheffield the proportion of the total deaths borne by the child population was very small, the child population in these two latter towns being well vaccinated—a condition of things explainable by the proposition that vaccination has a very potent protective influence for nine or ten years (*Sect.* 192).

(3,) Recent epidemics of smallpox show that vaccinated persons are less liable to suffer, fatally or otherwise, from smallpox than the unvaccinated

– a phenomenon that had been noticed in previous epidemics (*Sects.* 219, 220, and 245-251); whilst vaccinated persons have the disease much less severely than the unvaccinated (*Sects.* 252-268)—the severity of the disease practically being proportionate to the number and size of vaccination marks, more especially when three or four marks are compared with one or two (*Sect.* 294), though the inter-dependence of foveation and protection from smallpox is not equally proved (*Sect.* 296). The protective potency of vaccination possibly never altogether ceases (*Sect.* 377).

(4,) Taking hospital experience, there is clear evidence that, whilst the re-vaccinated attendants escaped smallpox, many of those who had neither passed through an attack of the disease nor been re-vaccinated were attacked by the disease (*Sect.* 325); and taking the population at large, re-vaccinated persons seem to be in a position much more advantageous not only than the unvaccinated but than adults who have only been vaccinated in infancy (*Sect.* 342),

(5,) Considering all the facts, it appears that, under certain conditions, the tissues of the cow are liable to transform smallpox into vaccine, suddenly and completely, or gradually and incompletely, but what the above conditions are has not yet been clearly made out; though under other conditions, and these seem most generally to obtain, this transformation into vaccine does not occur at all (*Sect.* 360). Recent bacteriological experiments go to suggest that vaccine is simply the attenuated virus of smallpox (*Sect.* 361).

The above facts are true not only as regards the British Isles but also as regards foreign countries (*Sects.* 345-350).

(6,) A careful examination of facts leads to the conclusion that, although some of the dangers said to attend vaccination are undoubtedly real and not inconsiderable in gross amount, yet when considered in relation to the extent of vaccination work done, they are insignificant and diminishing in numbers under the better precautions of the present day, and likely still further to diminish with future precautions which experience suggests. This statement was made after carefully considering the statistics in connection with syphilis, cancer, erysipelas, tabes mesenterica and scrofula, pyæmia, bronchitis, diarrhœa, leprosy, and skin diseases—there being found to be no evidence to justify the statement that vaccination has either substantially or appreciably increased the mortality from any one of these named (and accused by the anti-vaccinators) diseases (*Sects.* 378-434). At the same time the following suggestions are thrown out, whether calf or humanised lymph be used (no preference being given to one or the other kind of lymph in the Report):—

(*a*,) Extend the compulsory vaccination period to 6 months from birth, except in an outbreak or epidemic of smallpox; and longer, if infectious disease (erysipelas, scarlet fever, measles, varicella, etc.), or known insanitary conditions are prevalent within the neighbourhood (*Sects.* 438, 440 and 445).

(*b*,) Absolute cleanliness of the arm during the vaccine period, whilst the vaccination operation itself and the subsequent inspections (one during the second week, and a second during the third), ought to take place at the home of the infant vaccinated (*Sects.* 442, 443 and 450).

(*c*,) Lymph to be collected only in small-sized tubes (not points) and mixed (perhaps) with glycerine, whilst the instrument used for the operation should be simple and sterilized, and the insertions not too close together (*Sects.* 448 and 449).

The Commission's Report then deals with the question of other means than vaccination for preventing smallpox, and speaks with no uncertain sound, definitely stating that there is nothing to warrant the conclusion that in this country vaccination might be safely abandoned and replaced by a system of complete notification followed by immediate hospital isolation of the cases, together with careful supervision (or, if possible, isolation) for 16 days of the inmates of infected houses—though as an auxiliary to vaccination, isolation is extremely valuable (*Sects.* 449 and 503).

The Report also points out the danger of smallpox hospitals (when in use) in populous districts, and the advisability, therefore, of Sanitary Authorities being made to supply isolation hospital accommodation with sufficient space around to permit of rapid additions (in the form of temporary buildings) being at any time provided (*Sects.* 504 and 505); and suggests, too, that Sanitary Authorities should be allowed to give compensation for loss of wages, and generally for any expenses occasioned during an outbreak or epidemic of smallpox, either in isolating or quarantining (*Sect.* 506).

The subject of tramps as a medium for the propagation of smallpox is also touched upon, and legislative powers, such as those suggested and mentioned in the "Medical Annual" of 1895 (page 544), advised.

In conclusion, the Report suggests the advisability of transferring the duties connected with vaccination to the Sanitary Authorities, and makes many suggestions for rendering vaccination more popular (most certainly retaining and, as far as possible, enforcing it), by *inter alia* abolishing repeated penalties for non-compliance, allowing conscientious objectors to make statutory declarations as to why they object to vaccination, the introduction into England, Wales, and Ireland of the so-called Scotch system (with certain modifications where desired), and by emphasizing the great value of re-vaccination, etc.

The fortress of vaccination has been assailed by the big guns of the anti-vaccinators but has proved itself invulnerable. The two anti-vaccinators on the commission (one of whom was practically pledged to anti-vaccination as the M.P. for Leicester, and the other, it is reported, the son of an ardent anti-vaccinator) refused naturally to sign the Report, and issued a minority Report consisting of 65 pages and containing only very short references to the smallpox outbreak in Leicester (though the evidence from Leicester in favour of anti-vaccination occupied 42 days), and to the special Report on the outbreak at Leicester (proving the value of vaccination) by Dr. Coupland consisting of 66 pages!! It is interesting to look forward

to what Parliament will do in the matter, but it would be certainly unwise to prognosticate!

The bacteriology of vaccine is still being worked at, and Drs. Klein and Copeman appear to have recently discovered small (? spore bearing) bacilli, both in vaccine and variolous lymph (the latter on the fifth day of eruption), which they think may prove to be the *vera causa* of smallpox These bacilli have not yet been cultivated in any of the artificial media, except in a hen's egg incubated for about one month at a suitable temperature and previously inoculated with variolous crusts in a normal saline solution. Vaccine contains these same small bacilli (which can be cultivated in the hen's egg) together with extraneous bacilli (saprophytes), which can be destroyed (except the *bacilli subtiles*) by being mixed with 50 per cent. chemically pure and dilute glycerine, and after storing the mixture. Dr. Copeman has successfully vaccinated and variolated monkeys.

Measles.—The subject of measles (and the advisability of notifying this disease to Sanitary Authorities) has been again well to the front during the past year, and an elaborate Report by the Local Government Board has been published on the same subject. The question is simply one of expense, as it is practically agreed that notification would be useless without corresponding hospital isolation and subsequent disinfection. Hospital isolation would certainly be expensive, and there would be the difficulty of the *very* young ages of the patients who generally contract measles, and the fact that the disease is highly infectious in the very earliest stages, *e.g.*, pre-eruptive, and often before the true nature of the disease is (if ever) realized, whilst medical men are only consulted in a percentage of the cases. The majority of health officers are agreed that notification alone would be practically useless in respect of lessening measles—incidence and mortality; but might be useful in the sense that houses would be visited and insanitary conditions (when found) remedied, children from infected houses kept more rigorously than at present from school, infected houses be disinfected, and the officials of a Sanitary Authority brought more into contact with the mothers of infected children, and so a process (slow though it might be) of education in sanitary matters, and in the dangers and proper treatment of measles, result. Measles causes a larger number of deaths than any other zymotic disease and ought certainly to be rigorously combatted if possible.

Oysters and Infectious Diseases.—The Local Government Board's Report on oysters and their relation to outbreaks of infectious diseases, and the independent investigations of the "British Medical

Journal's" special commissioner and others, have been published during the year, and go to show that the conditions under which some oyster-beds exist are anything but satisfactory owing to their close proximities to the outfalls of main sewers. The practical outcome from these Reports will be awaited with anxiety, and oyster-breeders will have to make radical changes where necessary before the Public will be satisfied, while, doubtless, Sanitary Authorities will apply to Parliament for increased powers to enable them to take action in cases where they have reason to suspect the transmission of disease through the medium of oysters or other shell-fish. Indeed, the Brighton Corporation has already applied, though unsuccessfully, to include in their private improvement Bill a clause to enable their medical officer of health to inspect any place where shell-fish is kept or cultivated if he has reason to believe that the consumption of such shell-fish has caused infectious disease, or if he believes that such shell-fish is liable to be exposed to contamination by sewage, the Corporation having power to call upon the person cultivating or keeping such shell-fish to appear before them and shew cause why an order should not be made prohibiting the supply of such shell-fish within the borough of Brighton. Strange to say, it was from the Local Government Board that opposition came, the Board objecting to the insertion of such a clause in a private Bill. *Theoretically*, the contamination of such oysters and their consequent causation of outbreaks of disease is easy to understand, but *practically* difficult to prove owing to the want, at present, of any conclusive statistical evidence. All are agreed, however, as to the advisability of a Central Authority taking the matter up and bringing pressure to bear upon certain local Authorities to put and keep in order, sanitarily, their oyster-beds and ponds so as to free them from all danger of sewage contamination, whilst, afterwards, precautions must be taken to prevent the oysters being stored in polluted matter prior to their being sent to market or sold retail in shops.

Water Supply and Typhoid Fever.—Another matter which is concerning London is the relation (if any) between the water supply and typhoid fever. There is no doubt but that a pure and wholesome water supply is a *sine quâ non* for any Community, and judging by the examples set by other large Municipalities, *e.g.*, Manchester, Birmingham, Liverpool, it does seem strange that London has not yet risen to the occasion and decided to obtain a water supply second to none. The fact, however, remains that London has not as yet, and meanwhile it has to be settled what course or line of action is the best —if only as a temporary matter. Is it possible, by supplying extra

storage accommodation and better filtration methods, to depend upon the existing supplies, *e.g.*, Thames, Lea, and Wells ; or must London face the enormous expense connected with going far afield for an entirely new water supply, *e.g.*, to Wales? There are many arguments to be brought forward on both sides, but on the subject of the advisability of a Municipality having absolute control over its water supply there can hardly be a second opinion. What is also wanted is something definite as to the relative advantages of bacteriological and chemical analyses of water. For instance, in regard to typhoid fever, Dr. Klein has recently stated that no value was to be attached to negative evidence or to the apparent absence of typhoid bacilli from a given sample of water or milk, though the presence of *bacilli coli* must excite suspicion—as where they were, typhoid bacilli might be—a somewhat unsatisfactory state of things when one remembers the ubiquity of the *bacilli coli*. The mere counting of the number of bacilli in a given quantity of water, *i.e.*, one cubic centimètre, is not enough : a recognition of the species also is required. The only bacteriological standard for filtered water is that the whole of the organisms (whether bacteria or sewage protozoa) contained in the unfiltered water shall be removed—to accomplish which sand filters are not always trustworthy (*e.g.*, Altona and cholera), and the question as to whether, or not, it is possible to Pasteurize a large municipal water supply will, it is hoped, be shortly definitely settled—the Municipality of Darjeeling, with the sanction of the Government of India, actually making the practical experiment at the present time.

Germs and anti-germs are still being worked at, and if we are to believe everything we hear, life will not be worth living, for it is reported that aërated waters, natural and artificial, contain bacteria—thereby exploding the idea that up to now has been held, viz. : that no germ can live for any length of time in seltzer, apollinaris, etc., and that the consumption, therefore, of such drinks was safe. The supposed causal germs of rinderpest, the plague, African "fly disease," etc., have been discovered during the year, and an anti-typhoid serum introduced by Dr. Chantemesse, of the Pasteur Institute at Paris, the greatest use of the latter, for the present at least, being that suggested and applied by Messrs. Widal and Sicard, who add a drop of anti-typhoid serum to a drop or two of the blood of a patient supposed to be suffering from typhoid fever. If the patient be suffering from typhoid fever, the liquid clears up on the addition of the anti-typhoid serum, the bacilli running together, becoming motionless, and dropping to the bottom of the glass tube into which the blood of the

patient is placed. Where the patient is not suffering from typhoid, the liquid remains cloudy and does not clear up. The importance of the above statements (if true) as a diagnostic cannot be too much insisted upon.

Diphtheria.—In connection with the antitoxin of diphtheria an important Report was published at the beginning of the year—the joint production of the medical superintendents of the various hospitals of the Metropolitan Asylums Board—dealing with the diphtheria cases treated with antitoxin during 1895, and compared with those of 1894—the two years being comparable as to diphtheria (severity, etc.). Allowing for the "personal equation" of the various superintendents, the following results may be tabulated as proved from this Report:—

(1,) Great reduction in the mortality of cases brought under treatment on the first or second day of illness, such reduction being specially marked in the laryngeal cases.

(2,) Improvement in the results of tracheotomy.

(3,) The clinical course of the disease slightly improved, as shown by the statistics:—

In 1894, 3042 cases and 902 deaths ... 29·6 % mortality
In 1895, 2182 cases and 615 deaths ... 28·1 % mortality
(46·4 per cent. of the cases treated being under 5 years of age).

(4,) The earlier the treatment with antitoxin, the better are the results, *e.g.*:—

	1895 (antitoxin)		1894 (all cases)
Treatment commenced on 1st day	... 11·7 %	death rate	... 22·5 %
,, ,, ,, 2nd ,,	... 12·5 %	,,	... 27·0 %
,, ,, ,, 3rd ,,	... 22·0 %	,,	... 29·4 %
,, ,, ,, 4th ,,	... 25·1 %	,,	... 31·6 %
,, ,, ,, 5th ,,	.. 27·1 %	,,	... 30·8 %

(5,) Rash observed as a complication after antitoxin in 45·9 per cent., joint pains in 4·7 per cent., of the cases. The final summing up of the six superintendents is as follows: "Antitoxin is a remedy of greater value than any other with which we are acquainted in the treatment of diphtheria"; and such will doubtless finally be the verdict of the Profession generally as statistics multiply.

Sewage Purification.—That some germs are benign, or even beneficent, has been prominently brought forward recently in connection with the bacterial method of sewage purification, a method at present being tried at Exeter by Mr. Donald Cameron (the city surveyor) under the title of the "Septic Tank System of Sewage Treatment." The tank is made of concrete, and buried so as to exclude, practically, both light and air, with the result that certain

micro-organisms (the so-called anaërobic) increase and multiply, feeding meanwhile on the solids of the sewage, breaking them up and converting them into harmless products. No previous treatment of the sewage takes place, but it passes into the tank below the water level, and after being changed by the action of these micro-organisms, passes out as effluent (also below the water line) and is conducted into filters of coke breeze or screenings from small pieces of coke, and here acted upon by the so-called nitrifying organisms. The changes are perfectly "natural" and due to the action on the organic matter of the sewage by the micro-organisms with the following interesting, but remarkable results :—

(1,) The sludge is disposed of by solution.

(2,) The effluent is useful as a manurial product.

(3,) The system is cheap as compared with other systems.

About 10,000 gallons per day can be, and are being, thus treated at Exeter, with the result that no sludge is formed and the effluent is comparatively clear, inoffensive, and not liable to after-fermentation ; in addition, it is, manurially speaking, valuable and ready to be filtered through land, being free from solids. The micro-organisms involved are the so-called anaërobic, and act by reducing and de-oxidising the different organic matters with the formation of water, CO_2, NH_3, etc.

Experiments, on somewhat similar lines, are being carried out by the London County Council, the *bacilli albicantes* being actually added to the sewage in the so-called bacterial beds, as they are the bacilli, according to Mr. Dibdin, that are useful for the purpose of acting on the organic matters of the sewage.

We are clearly on the eve of a most important discovery in respect of the purification and treatment of sewage—a discovery that, in its practical working out, bids fair to save enormous amounts of money for Sanitary Authorities and Municipalities generally.

Milk.—The subject of milk as an agency in the conveyance of disease has again been before the public, and the risks of typhoid, scarlatina, diphtheria, throat affections, cholera, foot and mouth disease, gastro-enteritis, etc., being contracted through milk, duly pointed out and impressed upon us, with the result that we are driven to acknowledge the importance

(1,) Of investigating the milk supplies in all cases.

(2,) Of the careful supervision and regular inspection of dairies (which should be away from all houses) and of all cows.

There are various ways in which the disease germs gain admission into the milk, viz. :—

(1,) From the cow itself, *e.g.*, anthrax, tuberculosis, foot and mouth disease, and acute enteritis ;

(2,) From the milker, *e.g.*, typhoid, diphtheria, scarlet fever, cholera;

(3,) From impure water which may be used for washing the cans and pails, or for cooling the milk, or for adulteration, *e.g.*, typhoid, diarrhœa, etc ;

(4,) From the barn, shippoon, or dairy.

In connection with milk epidemics it is well to remember that the cases generally appear suddenly and subside equally suddenly, the houses affected are widely distributed, and are chiefly the houses of the better-to-do classes, whilst children, or special milk drinkers, are mostly affected. In view of the above statements, the advisability of sterilizing all milk suggests itself, and this may be accomplished (*a*,) by boiling or (*b*,) by cooling below 10°C. (See also Addendum by Prof. Chapin, of New York.)

Dry Rot.—Sewer gas and coal gas have been often blamed for causing disease, but it is only during the past year that the "dry rot" has been definitely stated to give rise to serious symptoms. Dr. W. H. Robb, of Montgomery County, in "New York Medical Journal," first drew attention to dry rot in timbers of dark, damp, and poorly-ventilated cellars being the actual cause of much sickness that is often overlooked—the symptoms being like those of remittent fever, or pulmonary, intestinal, or other disturbances. The dry rot is due to a fungus growing on timber that is surrounded with warm, moist, stagnant air, *e.g.*, underground basements (under kitchens), the end of the timber being built into the walls or skirting on new walls. The timber so affected is that which has been cut wrongly, *i.e.*, before the sap has returned to the roots, and the fungus, which is white or yellowish-white and consists of the *merulius lacrimans* (mixed with moulds, *e.g.*, *penicillium glaucum* and *aspergillus glaucus*), gives rise to a vegetable putrefaction in the wood. As a remedy or preventive, the timber ought to be thoroughly dried by stacking, or saturated with creasote, or "Hoskinised" (as it is called), consisting of a patent process for seasoning and preserving wood (see "Medical Annual," 1896, p. 641) ; whilst free ventilation ought to be provided under the ground floors. The fungus is not found in tropical or sub-tropical climates, being killed by a temperature of 30°-37°C.

Tuberculosis.—The Royal Commission on tuberculosis reported during 1895, and full details were given in the "Medical Annual" for the year 1896, pp. 645-646. Since then another Royal Commission has been appointed with instructions to determine (if possible) what administrative procedures are available and would be desirable for

controlling the danger to man through the use of tuberculous meat and milk.

Adulteration.—An important case has been decided in the Courts in connection with preserved green peas adulterated with copper. At the instance of the St. Saviour's Board of Works, a summons was taken out against a grocer for selling preserved green peas adulterated with 3·16 grains of sulphate of copper per lb., and after hearing a variety of conflicting professional evidence, the magistrate convicted —a conviction which was appealed against at Quarter Sessions but upheld. In the course of the evidence it was pointed out that the object of adding copper was to make the peas appear of a fresh and bright green colour, and that in France such addition of copper was allowed in the case of peas intended for exportation! In the United States, 3 grains to the pound can be added, provided the peas are labelled so that the purchaser knows what he is buying. Another important point brought out in evidence was the fact that the analysis of Somerset House (to whom an appeal is allowed under the Food and Drugs Acts) may be, at times at least, fallacious and unreliable—a fact calling for amendment forthwith.

ADDENDUM.

MILK. *Henry Dwight Chapin, M.D., New York.*

Dr. Rowland Freeman[1] discusses milk as an agency for spreading disease. Infection by milk is well established in typhoid fever, scarlatina, diphtheria, tuberculosis, cholera, foot-and-mouth disease, and acute enteritis. The following conclusions are reached by a study of various epidemics:—

(1,) Whenever a case of communicable infectious disease is reported, inquiry into the source of the milk supply should be made.

(2,) Milk traffic should be separated from houses where people live. The dairy building should be at least one hundred feet from either the house, barn, or privy, and should be on a higher level than any of these, and should have a pure water supply of its own. At this dairy building all the dairy work should be done, including the cleansing of pails and cans.

(3,) It should be unlawful for anyone who has come in contact with a sick person (when this sickness is not positively known to be non-contagious) to enter the dairy building or barn, or to handle the milk.

(4,) All men connected with the milk traffic should be compelled to notify the authorities on the outbreak of any disease in their respective abodes, and to abstain from their work until permission to resume is given them by the authorities notified.

(5,) Cities should accept milk only from dairies which are regularly inspected, and where all the cows have been tested with tuberculin, and those giving the characteristic reaction have been killed, and the premises disinfected.

(6,) The tuberculin test should be applied to all cattle, and those which react should be killed, the owner being reimbursed from State funds. The premises on which such tuberculous cattle have been kept should be thoroughly disinfected. All cattle which are brought into the State should be quarantined until the tuberculin test has been applied.

(7,) The use of one long trough for the purpose of feeding many cattle should be avoided, since it is a ready means for the conveyance of pathogenic germs from one animal to another.

Dr. Freeman[2] advises pasteurization of milk at between 65° C. (149° F.) and 70° C. (167° F.) for the following reasons: (1,) It destroys almost all the ordinary air bacteria which occur commonly in milk; (2,) It destroys the bacillus tuberculosis, the bacillus typhosis, the bacillus diphtheria, and many other pathogenic bacteria; (3,) It causes no change in the taste of the milk, and avoids those chemical changes in the milk which are produced by higher temperatures; (4,) It is possible to pasteurize accurately at this temperature without the use of a thermometer.

Dr. A. R. Leeds[3] advises pasteurized in preference to sterilized milk. The writer's experience with commercial sterilized milk is that 30 per cent. of it is not sterile. In the case of milk, a universal system of prevention and prophylaxis is preferable to aiming at a cure.

Dr. R. G. Freeman[4] discusses the significance of micro-organisms in milk, and reaches the following conclusions: (1,) Milk, as delivered in cities, contains a vast number of bacteria, their presence being due to defective dairy methods and slow delivery of milk to the consumer; (2,) A large amount of sickness has been caused by the presence in milk of the germs of typhoid fever, diphtheria, scarlet fever, and tuberculosis; (3,) The number of these pathogenic micro-organisms in milk can be materially diminished by proper dairy inspection and control, while in tuberculosis proper legislation might lead to the stamping out of this disease in cattle.

Dr. Louis Starr[5] reports cases of infantile scurvy from the use of sterilized milk. The prolonged and intense heating produce changes

especially in the lactalbumin, which has its solubility diminished, and in the fat globules, which are made to coalesce with each other, and with some of the insoluble albuminous matter.

Dr. Starch[6] also calls attention to the danger of scurvy from a prolonged use of highly sterile milk. He would limit the use of sterilized milk to seasons of very hot weather, and to the dwellings of the very poor.

REFERENCES.—[1] "Med. Record," vol. xlix, No. 13, 1896; [2] "Arch. Ped.," Aug., 1896; [3] "Diet. and Hygienic Gaz.," vol. xii, No. 2, 1896; [4] "Amer. Med. Sci. Bull.," No. 4, 1896; [5] "Amer. Journ. Med. Sci.," Dec., 1895; [6] "Münch. med. Woch.," No. 42, 1895.

THE EDITOR'S TABLE.

A Review of New Inventions, and Pharmaceutical and Dietetic Novelties.

SURGICAL APPLIANCES.

Accouchement Set (Antiseptic).—The physician who leaves the preparation for child-birth to the patient or nurse is liable to find, and as a matter of fact does find, that many things which under modern antiseptic treatment are essential, have been forgotten or are not supplied under conditions which are entirely satisfactory. Messrs. Maw, Son & Thompson have endeavoured to remedy this difficulty by supplying in a single box every article required by the mother or child during accouchement. It comprises a waterproof sheet of sufficient thickness to lay beneath the patient, and measuring 3 feet by 5 feet; also another of the same dimensions for laying upon the floor. There is an "accouchement sheet," or in other words a sheet of antiseptic wool over ½ inch in thickness, protected by gauze, upon which the patient lies. This measures 3 feet by 3 feet 6 inches. Also a carefully-prepared antiseptic dressing for the cord, and a very firm and useful binder for the mother. A box of supplementary articles, which include boxes of Fuller's earth, and violet powder, a bottle of tabloids of perchloride of mercury, and one of carbolised petroleum jelly, a cake of pure carbolic soap, straight steel and safety pins, and linen thread. There are also some of the firm's well-known antiseptic towels for ladies, and antiseptic napkins for infants, so that the practitioner who advises his patient to purchase one of these complete sets, will be sure of having everything to hand when he wants it, and materially aid the convenience and safety of the mother and child.

Atomiser.—We have previously noticed the Saxol atomiser, introduced by Messrs. Ferris & Co., of Bristol, for applying an oil spray to the throat or nose, Saxol, a very pure petroleum, being the substance employed, either alone or in combination with various medicaments, such as cocaine, menthol, etc. This atomiser is particularly adapted for the

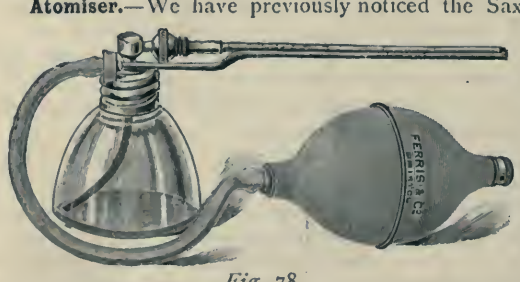


Fig. 78.

administration of these sprays by the nose, although we have constantly used them for the throat. Messrs. Ferris & Co. have now brought to our notice a similar spray fitted with a long tube (*Fig.* 78), which enables the nozzle to be carried behind the root of the tongue, so that the full effect of the spray can be applied to the larynx. It is an excellently-made and a very portable appliance, and will meet the requirements of practitioners who know the soothing effect of saxol on the irritable mucous membrane, and the great advantage it has over water as a vehicle.

Batteries (Chloride of Silver).—The batteries and cells of the Chloride of Silver Dry Cell Battery Co., of Baltimore, are now obtainable from Messrs. Ferris & Co., of Bristol. The advantage of these batteries is their great portability, a 30-cell battery being easily carried in an ordinary hand-bag. A dry cell of the Leclanché type would not be durable if made in the smaller-sized cells, and therefore batteries made with these cells cannot fail to be heavy. The chloride of silver batteries of the Baltimore Co. are likely to meet the wants of many practitioners.

Blunt Hook and Crotchet.—In this instrument (*Fig.* 79) the hook is made in the form of a crook instead of the ordinary pattern, at the suggestion of Dr. Forbes-Ross, who found that the blunt hooks at present in use are very liable to penetrate the child's body and cause injury. The suggestion is practical, and Messrs. Sumner & Co. have made an instrument which obviates all risk from this cause.

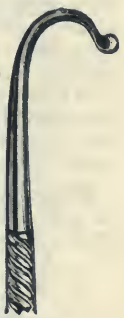


Fig. 79.

Catgut Sterilizer.—Mr. Henry Jellett, of the Rotunda Hospital, has introduced a catgut sterilizer which is a distinct improvement on the method originated by Dr. Fowler. It consists essentially of a brass box with a very tightly screwing lid, which has been very perfectly made by Messrs. Fannin & Co., of Dublin. The catgut having been wound *loosely* on glass-plate, is placed in absolute alcohol for three or four days. It is then transferred to the sterilizer, which is three-quarters full of alcohol. This is then placed in a saucepan of cold water and boiled for half an hour. The catgut is then placed in a mixture of alcohol and glycerine (5 to 20 per cent. of glycerine). It is recommended that this solution shall be changed every week or ten days. The sterilizer is also useful for many other purposes, notably the sterilization of sea-tangle tents, etc. Practitioners using this appliance will do well to employ the "Ligature Holders" mentioned below.

Cat-gut and Ligature Holders.—An objection has been raised to the ordinary glass plates used for the sterilization of cat-gut and oil-silk, on account of the fact that the parts in contact with the flat glass slabs do not get thoroughly sterilized during the boiling process. Messrs. Reynolds & Branson, of Leeds, in order to obviate this diffi-

culty, have invented and patented a glass reel so shaped as to allow every part of the cat-gut to come in contact with the fluid in which it is boiled. The reels are so made that a good length of ligature may be wound around each, but we would recommend the use of short lengths on a number of reels, so that the complete sterilization may be assured. They are very inexpensive, and meet a practical difficulty.

Chloroform Mask (Aseptic).—We noticed this appliance in a previous issue, but it has recently been so much improved as to be a practically new instrument. It is so simple in construction and occupies so little space, that we think it deserves a place in the surgical bag of the many practitioners who prefer the simple mask to the more complicated inhalers. R. Sumner & Co., Liverpool.

Colour Tests.—A wool stick for testing colour perception has been suggested by Dr. E. H. Cartwright, late House Surgeon, Royal Westminster Ophthalmic Hospital. It is a modification of one described by Dr. Thomson, of Philadelphia, in the "Trans. Amer. Ophth. Soc.," 1880. The principle is the same, but by the introduction of a hinge, the apparatus is rendered more portable, and the white sheet, besides providing a suitable background for the colours, obviates the entanglement of the wools in unwinding, which is so troublesome in the original form. There are one or two minor differences in the arrangement of the colours, and also of the method of suspending them, in order that they may be more readily removed, if required. It is a very practical arrangement, and we think that practitioners not provided with a complete set of Holmgren's wools would do well to use it, as it is much more convenient and helpful. It is made by Down Bros., 21, St. Thomas's Street, London, S.E.

Dilator (Uterine).—Dr. C. Hogan has devised this instrument (*Fig.* 80) for cases where abortion is inevitable, and hæmorrhage renders active measures necessary. The instrument is planned upon the principle

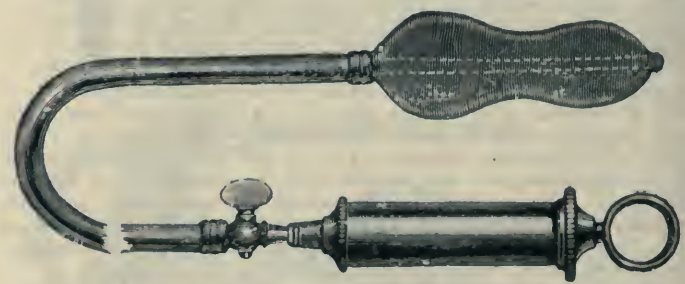


Fig. 80.

of Cooper-Rose's epistaxis inflator. The shape of the instrument prevents it from being forced out of position, and that part which is near the inflator carries a catheter which stiffens the tube and acts as

a sound for introduction. The instrument is thoroughly practical and well made, and is sold with the inflator and brass stop-cock for 6/6. Sumner & Co., Liverpool.

Disinfecting Apparatus.—One of the most convenient methods of disinfecting rooms after infectious diseases is provided by the use of Sulphur Dioxide (Anhydrous Sulphurous Acid), which is sent out in sealed cylinders by A. Boake Roberts & Co., Stratford. There is no question of the thoroughly antiseptic properties of this agent, and the safety from fire or other difficulties which may arise in the use of burning sulphur renders it a very safe and practical appliance for the practitioner to recommend.

Dressing Box.—Every practitioner knows the difficulty of carrying dressings in his surgical bag, and we think the effort made by Messrs. Reynolds & Branson, of Leeds, to obviate this difficulty will command approval. It takes the form of a celluloid (transparent) cylinder (*Fig.* 81), in which dressings of all kinds may be placed, and the contents be visible at all times. Each cylinder is provided with a cover which is also an air filter, through which air may reach the dressings but germs are rigidly excluded. There is the practical directness about this arrangement which characterizes the inventions of the northern firm, and commands attention to their productions. The firm also prepare the dressing cases of an oval form, which may fit more conveniently into the surgical bag than the cylindrical form.

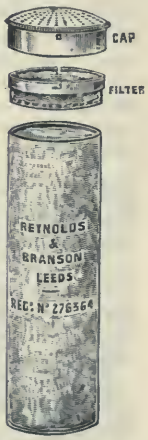


Fig. 81.

Dressings (Absorbent).—We have carefully examined a number of samples of the cotton-wool and lints which Messrs. George Haynes & Co., of Stockport, manufacture for medical and surgical purposes, and we find that in every case the articles correspond with the descriptions given, and are of the same excellent manufacture for which the firm has long been noted.

Under the name of **Sarina Tissue,** Mr. William Jowett, of Mellor, Derbyshire, has produced a cotton-wool of an absorbent character, in sheets about ¼-inch thick, with a light backing. It enables a pad of any size needed for a dressing to be cut off and applied as required. It costs 2/- a yard.

Robinson's Tissue, made by Robinson & Sons, Ltd., of Chesterfield, is a decided novelty, and is based upon accurate scientific investigations. In the first place it is proved that cellulose wadding is the most absorbent of all dressings ; it is more so than turf, moss, or peat, which runs it near, and almost double the absorbent power of cotton-wool. This fact is due to its power of diffusion. But when cellulose wadding is used alone and becomes saturated, it softens and contracts, forming a firm, impenetrable layer like paste ; but cotton-wool is not only absorbent but soft and flexible, and it occurred to Messrs.

Robinson & Sons to combine these two substances in alternate layers, so that the defects of both could be removed. This they have done in the preparation of this tissue, which is a distinct advance in the preparation of dressings. When supplied with gauze on one or both sides, it is called "Robinson's tissue." When supplied without the gauze, "Robinson's dressing."

We have recently been using peat fibre very largely as a dressing; it has not only great absorbent powers, but also has no tendency to cake. It has one great advantage over all other dressings, in the fact that it is itself an antiseptic and deodorant. It is being largely used in the French hospitals, and we believe has a great future before it in this country when its value becomes more fully known.

The French company are manufacturing blankets and carpets of this material, and also sheets for accouchement, operations, and for children's cots. The great advantage being that all discharges are quickly absorbed and deodorized, while the materials of which the sheets and blankets are made having resisted the influence of damp and moisture for so many years, are not affected by any amount of washing or treatment required for cleanliness. One ingenious application of peat is a blanket for putting over horses when they come in after rain. The moisture is quickly absorbed by the peat, so that the horse is quickly dried. There appears to be no depôt at present in this country for the sale of these dressings, but we believe that Messrs. Ferris & Co., of Bristol, can furnish our readers with information on the subject.

Priestley Leech, M.D., F.R.C.S.

Neve draws attention to the use of **Sawdust** as a dressing. The French war department adopted peat as the cheapest surgical dressing, but Neve has tried this, and returned to sawdust. This has been the staple dressing at the Kashmir Mission Hospital, India. The sawdust is put in muslin bags, and the pads are impregnated with a 1 in 2,000 solution of mercuric zinc cyanide. The pads can be sterilized in a Cathcart's or Schimmelbusch's oven. The sawdust will absorb twice its weight of pus or serous discharge; they are exceedingly light and comfortable, and adapt themselves to the surface of the body. The sawdust should not be too fine, nor the muslin too coarse.

Dr. Matignon mentions the use of **Carbonised Straw** of rice as a cheap dressing. It was first introduced by M. Kikuzi for use during the late Chino-Japanese war. It is a brown almost black powder, containing charcoal, incompletely carbonised straw, and dust. The price is cheap, it is aseptic from the way it it is prepared, it is very elastic, and it can be obtained anywhere, as other straw than that of rice can be used. It is prepared like ordinary charcoal in a closed vessel. In order to obtain large quantities it must be burnt in a room, the doors of which have been closed. As it is very hygroscopic it is better to use it freshly made. At first it was used in gauze bags, but the particles of charcoal escaped through the meshes of the gauze, and then fine linen bags were used, which were previously disinfected by boiling in perchloride solution. The following advantages over gauze are

claimed: Its absorbing power is greater; it can be obtained anywhere in large quantities and rapidly; it is low in price, a twentieth that of gauze; it can be employed at once, as its preparation disinfects it; it needs no carrying, and its elasticity is equal to that of gauze.

Dr. Kane recommends **Asbestos** as a practical and useful substance for surgical dressings. These dressings may be carried in any parcel, paper-bag, or hand satchel, may be handled by dirty hands, spattered by blood or any sort of filth, and yet can be rendered absolutely aseptic in two minutes by tossing them upon the coals, or into the blaze of any ordinary stove. After having completed the operation, and just before the surgeon is ready to apply the dressings, they are thrust into the coals or flame of the nearest stove. The same dressings may be used if necessary, but repeated burnings seem to injure the quality of the material. The form of asbestos used is the asbestos fibre, which is as soft as silk floss, and its absorbent qualities are greater than those of absorbent cotton. Asbestos wicking, packing, and cording, are adapted for drainage tubes.

Dressings (Ever-Ready).—We called attention in a previous issue to the method of supplying all kinds of dressings on rolls, enclosed in tin cases, called "caddies," by Messrs. Ferris & Co., of Bristol, and our favourable opinion of the economy, cleanliness, and convenience

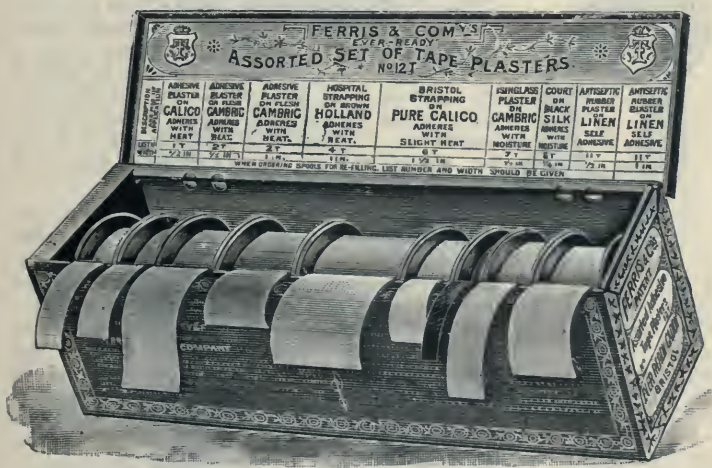

FERRIS & COMP'S
EVER-READY
ASSORTED SET OF TAPE PLASTERS
No 12T
ADHESIVE PLASTER ON CALICO ADHERES WITH HEAT
ADHESIVE PLASTER ON FLESH CAMBRIC ADHERES WITH HEAT
ADHESIVE PLASTER ON FLESH CAMBRIC ADHERES WITH HEAT.
HOSPITAL STRAPPING ON BROWN HOLLAND ADHERES WITH HEAT.
BRISTOL STRAPPING ON PURE CALICO ADHERES WITH SLIGHT HEAT
ISINGLASS PLASTER ON CAMBRIC ADHERES WITH MOISTURE
COURT OR BLACK SILK ADHERES WITH MOISTURE
ANTISEPTIC RUBBER PLASTER ON LINEN SELF ADHESIVE
ANTISEPTIC RUBBER PLASTER ON LINEN SELF ADHESIVE
WHEN ORDERING SPOOLS FOR RE-FILLING LIST NUMBER AND WIDTH SHOULD BE GIVEN
COMPANY
FERRIS & COMP'S
EVER-READY
ASSORTED SET OF TAPE PLASTERS
No 12T
BRISTOL

Fig. 82.

of this plan has been confirmed by daily experience since. Messrs. Ferris & Co. now send us some additional caddies (*Fig.* 82) containing the following: (1,) *Lintine.*—This is a compressed cotton wool, of the thickness of the best lint, and possessing greater absorbent properties. It is also cheaper. (2,) *Double Cyanide Tissue.*—This is one of a series

of sixteen gamgee tissues, impregnated with various antiseptics. When cut off to the size required, it forms a perfect dressing for wounds, and in its "caddy" is perfectly aseptic. It will be found a very useful addition both for hospital and private practice. (3,) *Alpha Oil Silk.*—A very soft and flexible oil silk of a delicate blue shade. (4,) *Cellular Wadding.*—This is an excellent dressing for wounds, being very absorbent, firmer in texture, and not likely to cake like ordinary absorbent wool. (5,) *Assorted Tape Plasters.*—This is a delightful caddy containing 9 rolls of plasters ranging from the flesh-coloured isinglass and black court plaster, ¼-inch broad, to strong strapping on Holland and calico, 1 to 1½ inches broad. This is decidedly a caddy which would be an advantage to every practitioner to possess. A description of the nature of each plaster, and particulars as to whether it requires heat, moisture, or is self-adherent, appears opposite each roll on the cover. It is very convenient, and shows great attention to detail on the part of the manufacturers.

Ear Channel.—Messrs. Reynolds & Branson, of Leeds, have introduced a new ear-channel (*Fig.* 83), which differs from those ordinarily in use in two particulars. The water falls into a funnel to which is attached an india-rubber tube, by which it can be conveyed to any convenient receptacle. There is no elastic band required for supporting the instrument, as by a convenient arrangement it is made to exactly fit over any si ed ear, and is made sufficiently light to be supported by the ear without inconvenience. It is a practical instrument, and will be appreciated by those who have discarded the ear-channels at present in use.

Fig. 83.

Ear Syringe (Twin Tank).—This is an arrangement suggested by Mr. J. J. Jackson, L.R.C.P., of East Ardsley, and carried out by Messrs. Reynolds & Branson, of Leeds. The scheme of the apparatus will be readily understood from the illustration given (*Fig.* 84). It is a particularly bold invention, and we had considerable doubt of its practicability until we had submitted it to careful trial. It looks as if the tanks would very readily fall off at the shoulder at the slightest movement of the patient, but as a matter of fact, the use of a safety pin placed in the centre of the chain which supports the two tanks, entirely obviates this, and they are fixed as firmly as is necessary for every practical purpose. We were also prejudiced against ear-channels for conducting the water from the ear, but this one is provided with the arrangement described above. In fact it is not only a bold invention for removing the difficulties and inconveniences attending the syringing of the ear, but it has been

carried out with such an attention to detail, that it is thoroughly practical. The enema syringe is fixed to the water receptacle by one

Fig. 84.

of Messrs. Reynolds & Branson's clips, and consequently holds a fixed position, causing no trouble. The nozzle which enters the ear is a soft india-rubber point on a glass tube, and is far preferable to the hard bone stem of the ordinary syringe, as it adapts itself to the contour of the ear. There is also provided an olivary pointed terminal for the administration of nasal douches, while the glass stem can be used for washing out sinuses. The whole apparatus packs into a case 5¼ inches by 4¼ inches and 2 inches in thickness. We can strongly recommend it to our readers.

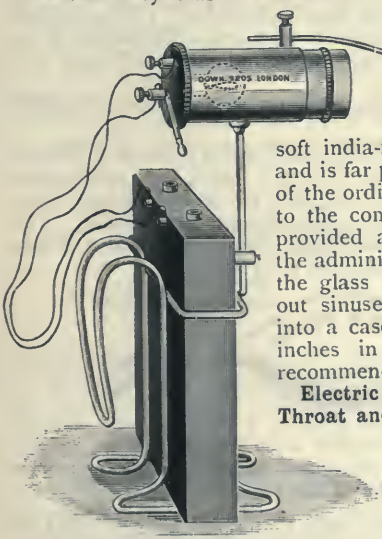


Fig. 85.—Stand, Accumulator, and Lamp with wire for swab attached.

Electric Hand Lamp (Improved) for Throat and Ear.—Suggested by Dr. E. O. Hopwood, of the London Fever Hospital (*Figs.* 85, 86).

A four-volt accumulator, carried in a light wire stand, is the source of electric power. The lamp, a small 3½-volt incandes-

cent one, is brilliantly lighted by a current of rather more than half an ampère. The beam of light, rendered parallel, convergent, or divergent by a three-quarter-inch focal length bi-convex lens in a sliding mount, can be so directed as to brightly illuminate the fauces without falling also upon the lips or teeth. A binding-screw on the top of the lamp case forms an attachment for the end of a wire swab (as shown in *Fig.* 85) for bacterioscopic examination, thus leaving the other hand available for the tongue depressor. The incandescent lamp is of course somewhat overworked, but it is inexpensive and is so mounted as to be easily renewable. The lamp is detachable from the pin which fixes it to the front of the stand. After two years' use the accumulators are still in excellent working order.

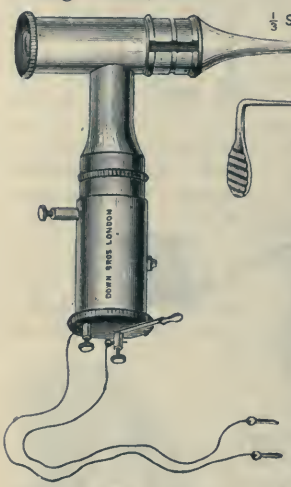


Fig. 86.—Lamp with Otoscope attached, and the Myringotome.

The lamp is furnished with a flange for the attachment of a Brunton's otoscope (*Fig.* 86) modified by having a slot cut in it so as to permit of the use of a specially shaped myringotome (as shown in the figure) through it. The membrana tympani is very well illuminated by the electric lamp, and operation upon it is rendered easy.

The lamp is made by Down Bros., 21, St. Thomas's Street, London, S.E.

Enema.—Under the name "Auto-Enema," Messrs. Mayer & Meltzer have introduced an enema syringe (*Fig.* 87) which only differs from those in ordinary use in one particular, viz., the bulb is placed immediately below the nozzle, instead of in the centre of its tube. The practical importance of this improvement is so obvious that it is only a matter for wonder that no one thought of it before.

Fig. 87.

It can be used with one hand, the bulb forming a handle by means of which the nozzle can be introduced and held in position.

Enema Box.—This is an exceedingly simple but effective way of preserving enemas without their kinking, or cracking, from being bent.

Two upright pegs are placed in the bottom of the box, and the enema is disposed around these in a sinuous curve. Messrs. Sumner & Co., of Liverpool, who lay this simple invention before us, say: "As the cost is no more than that of the ordinary box, there is no reason why the old form should be preferred." In this statement we cordially agree.

Enema Valve Strainer.—This is the latest contribution which Messrs. Reynolds & Branson have made towards perfecting the enema syringe (*Fig.* 88). It is well known that the valve frequently becomes blocked through small particles entering the syringe; they have made a delicate fibred strainer which fits over the end of the syringe and entirely obviates this. The cost is only sixpence, and they obviously prolong the life of the syringe to which they are fitted.

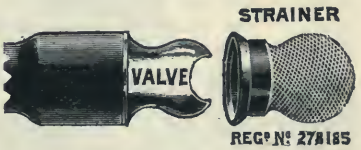


Fig. 88.

Eye-drop Flask.—A very cheap and practical instrument for applying drops to the eye has been sent to us by Messrs. Reynolds & Branson, of Leeds. It has an aperture at the upper part in which a piece of cotton-wool is placed, and at the end of the spout is a glass plug. Solutions may be sterilized in this flask, and will keep indefinitely. The cost of the flask is ninepence.

Forcible Feeding (A New Oral Method of).—The tube shown in the accompanying illustration (*Fig.* 89) has been designed by Dr. Henry Edmund Blandford for the purpose of facilitating the forcible feeding of the insane, and, while it is not intended to supplant the use of the œsophageal tube, it will be found extremely useful in many cases where sufficient attendants are not at hand to avoid the dangers of the latter method. The wedge-like extremity of the tube allows forcible

Fig. 89.

separation of the jaws when necessary. The instrument is connected with an ordinary feeding cup by a piece of stout indiarubber tubing. The patient must be controlled in the supine position on a hard mattress when the tube is inserted. If the mouth be pursed, an attendant is instructed to draw back the angle of the mouth, while the tube is inserted by a forward and rotary movement (preferably between the second bicuspid and the first molar), the cross-handle of the instrument being held vertically, in order that the stops may pass readily between the teeth. When once through, rotate the instrument

through 90 degrees, and so bring the stops in action, and then turning the end of the tube in the direction of the pharynx, keeping the tube firmly against the upper jaw, the liquid is allowed to flow either interruptedly or continuously immediately the patient's breathing is found to be unembarrassed. This may be readily done by alternately raising or lowering the feeding cup. Dr. Blandford has put this instrument to practical test and finds it of the greatest assistance, and he is confident that it will also be found of service in tetanus and surgical affections of the jaws where nasal feeding is not always feasible. The instrument is made by Messrs. Down Bros., St. Thomas's Street, London, S.E.

Gutta-Percha Tissue (Improvement on). — Under the name of Mosetig Bartest, a covering has been introduced by Messrs. Sumner & Co., of Liverpool, which takes the place of gutta-percha tissue and oil silk. It can be torn readily to the size required, and washed and treated with antiseptics, so that it is capable of being used again. It will also remain unchanged at a temperature of 212°F. It costs 2/- per yard.

Hammer-Toe.—Messrs. K. R. Schramm & Co., of 24, Great Castle St., Oxford Circus, W., have made a special study of appliances for the treatment of hammer-toe, and all who know the difficulties of meeting this and similar conditions by the appliances at present in use, will be interested in knowing that something better has been

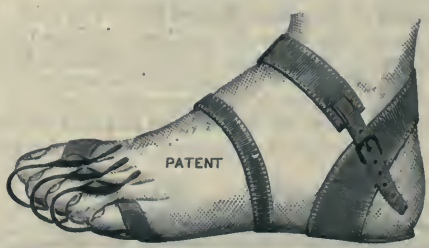


Fig. 90.

done (*Fig.* 90). The appliances employed are very simple. The toes are fixed by a spring which requires no straps or tapes to encircle the phalanges; they fix themselves automatically, and leave the circulation of the toe unimpaired. We should certainly advise our readers who have such cases to deal with, to either send them to Messrs. Schramm & Co., or to forward them a model of the foot. We have tested the sample sent to us and find that it could be worn without discomfort by a child.

Inhaler (Dr. King's). — Dr. King, of West Kirby, has devised an inhaler for patients suffering from consumption, bronchitis, asthma, etc., in which air is forced into a cylinder by a pump which is worked

by the foot (*Fig.* 91). The air, on entering the cylinder, passes through a perforated tube, over which lint is placed saturated with the medicament it is intended to use for inhalation; the medicated air then passes to the face-piece which covers the nose and mouth of the patient. The current is regulated by a tap placed in the outlet pipe. This apparatus has been found to yield satisfactory results in practice, and is well worthy of a more extended trial. The apparatus costs £3 3s., and is manufactured by Messrs. R. Sumner & Co., Liverpool.

Fig. 91.

Insufflator.—"The Perfect Powder Insufflator" (*Fig.* 92) is very similar in construction to the saxol atomizer, and has been introduced by Messrs. Ferris and Co., of Bristol, to meet a well-known want of a convenient instrument for the application of powders to the nose, ear, and throat. This appliance is furnished with a long tube (detachable) by which the direct application of

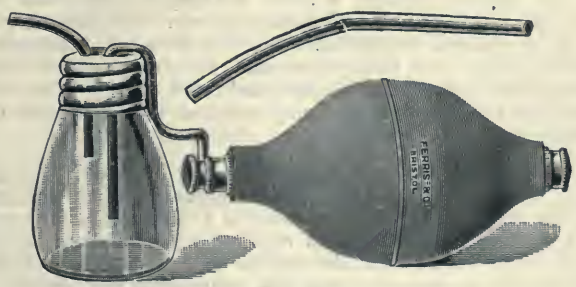


Fig. 92.

powders may be made. Its special advantage is that the bottle containing the powder has only to be fixed to the insufflator to be ready

for use; thus a number of different powders kept in the special bottles supplied with the instrument, can be used as required, the one being changed for another in a few seconds. The advantages of this in practice will be readily understood. We think the superiority of powder insufflated upon a catarrhal mucous membrane over a lotion or an injection is not yet as fully recognized by the general practitioner as it deserves to be. "To stop a catarrh keep the surfaces dry," has been our maxim for years. Particularly is this the case in chronic discharges from the ear. Another point to which we attach importance is that whatever application is employed in chronic catarrh, let it have an *alkaline* base if possible. The price of this insufflator is only 4/6, the extra bottles costing eightpence each.

Invalid Carriage.—We represent here an invalid carriage (*Fig.* 93), which has been constructed by Messrs. H. & J. Reading, Langham Place, London, W., which is well adapted to overcome the difficulties ordinarily attending the removal of patients. It is well designed and constructed, and our readers interested in the matter should apply for a fully descriptive circular issued by the firm.

Fig. 93.

Medicine Cases.—The Lifebuoy "Tabloid" Medicine Case is an extremely useful as well as ornamental little medicine chest made to fix on the wall of a yacht's cabin. In shape it is like a small lifebuoy covered with white jean and centred with a bevelled-edge mirror. Though only nine inches in diameter, its contents, in the form of "tabloids" of compressed drugs, are amply sufficient for an extended voyage. It is intended that it should be filled with such "tabloids" as the physician may suggest as being adapted to the special needs of the party on board.

The Physicians' Handle-Bar and Stay-Bar "tabloid" Medicine Cases are specially adapted for use in emergencies when the cycle is used as the means of reaching patients at a distance, or for carrying a supply of those medicines often required for immediate use in the course of a long round of calls over an extended area of country. These cases are at once compact and convenient, and are well and strongly made. To the many practitioners who are cyclists, they will appeal strongly. They are made to fit either the stay- or handle-bar. Burroughs, Welcome & Co.

Irrigator (New Abdominal).—The illustration (*Fig.* 94) shows a new form of irrigator made at the suggestion of Mr. T. H. Morse, F.R.C.S., of Norwich, which will be found useful in cases in which it is desired to wash out the peritoneal cavity. The longer tube is attached to a siphon apparatus, and the shorter tube serves for the return of the fluid. This arrangement effects a considerable saving of time. It is made by Down Bros., 21, St. Thomas' Street, London, S.E.

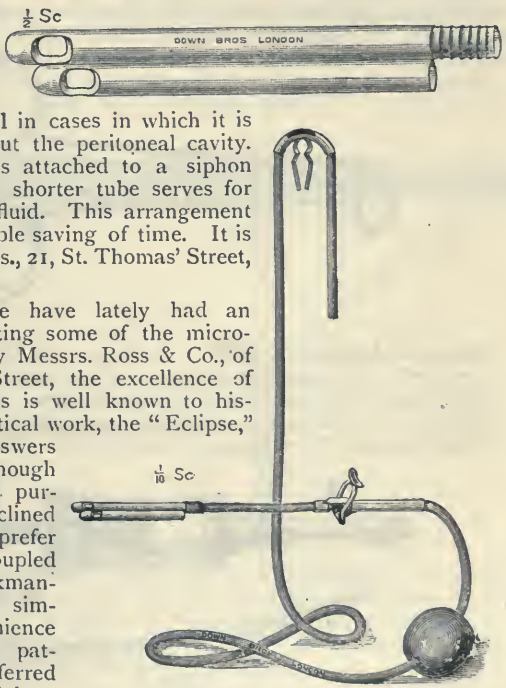


Fig. 94.

Microscopes.—We have lately had an opportunity of testing some of the microscopes produced by Messrs. Ross & Co., of 111, New Bond Street, the excellence of whose manufactures is well known to histologists. For practical work, the "Eclipse," of rigid pattern, answers all purposes, although this can also be purchased with an inclined limb by those who prefer this position. Coupled with the finest workmanship it has all the simplicity and convenience of the Continental patterns, which are preferred in the physiological laboratory to the more cumbersome and elaborate instruments to which we were formerly accustomed. They are furnished either with 1 in. and ¼ in. objectives, or ⅔ and 1/6 objectives at the same price.

The same firm have also introduced another microscope especially for bacteriological work, which is a very perfect instrument and remarkably rigid. It is difficult to describe all the details of their manufacture, but from careful examination we think that practitioners or teachers requiring microscopes for laboratory work would do well to examine both the instruments and the lenses which Messrs. Ross & Co. are now producing.

Needle-holder.—This instrument (*Fig.* 95), suggested by Mr. Coram L. S. James, M.R.C.S., is an improvement on the well known Wells's needle-holder in which the jaws, instead of being bent on the flat, are turned at an angle laterally, so that the needles are held at right angles to the axis of the forceps, enabling either the ordinary

surgical needles, or the flat pattern Hagedorn's needles, to be held by the one instrument. This idea has been well carried out by Mr. J. H. Montague, London.

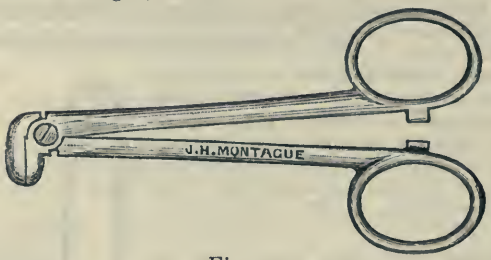


Fig. 95.

Ointment Introducer.—Mr. J. G. Nevitt, M.R.C.S., of Leeds, has introduced a new ointment syringe (*Fig.* 96) which is an improvement upon those already in use in several particulars. In the first place it is much larger, so that when once filled it contains sufficient for several applications, and being larger is easier to fill. The piston is marked

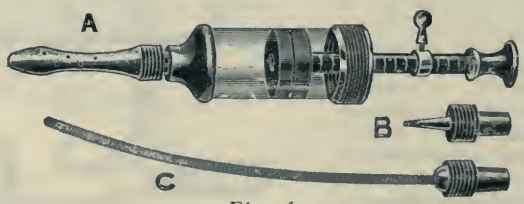


Fig. 96.

so that the quantity injected can be exactly regulated. It is provided with a celluloid oval tube, well adapted for conveying the contents well into the rectum, and also with a uterus tube for applying ointment to the cervix or uterus. It is excellently manufactured by Messrs. Reynolds & Branson, of Leeds, and is a very practical and useful instrument.

Operating Table.—Mr. Greig Smith has designed a new operating table (*Fig.* 97) which has many features to at once recommend it to surgeons, and we believe it is now in use in several London Hospitals. The general design will be readily understood from the illustration. It is manufactured by Ferris & Co., of Bristol.

A special feature of the table is the head-rest. This is a simple ring, covered with rubber which fits spontaneously on to the occiput or any part of the head, and gives the greatest possible facility to the anæsthetist, whether the patient is lying on the back, the side, or the face. It can be raised or lowered to any necessary extent; and by means of a ball and socket joint can be fixed in any position desired.

On this rest the head can, if desired, be easily fixed by a simple device. The table is arranged specially for hospital work, where different members of the staff are of different heights. A range of upward and downward movement over nearly two feet for one extremity and about eighteen inches for the other, should enable the surgeon always to operate with a straight back.

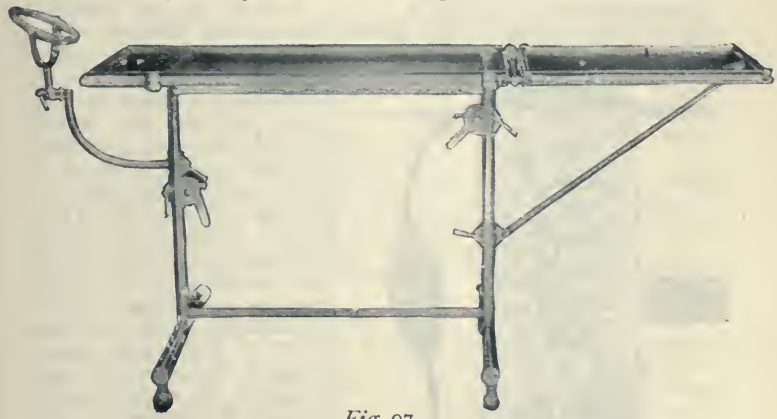


Fig. 97.

The table is non-absorbent; easily kept clean; simple in construction; gives the widest upward and downward movement that can be required; permits of the patient being placed in good position for every surgical operation; and, while it is firm and steady in every position, it can easily be moved in all directions.

Oxygen Cylinder Strap.—The necessity of carrying oxygen cylinders, by those engaged in rescue work in mines after explosions, has suggested to Mr. T. B. Abbott, L.S.A., of Leeds, the advisability of manufacturing straps by which the cylinder can be easily carried under difficult circumstances (*Fig.* 98). The straps firmly embrace the cylinder, and are carried round the waist, while the weight is chiefly borne by a strap passing over the shoulders. A supply of cylinders of oxygen should be provided at every mine, and it is equally necessary that they shall be fitted in such a manner as to make their transport easy and rapid. Messrs. Reynolds & Branson, of Leeds, are the manufacturers.

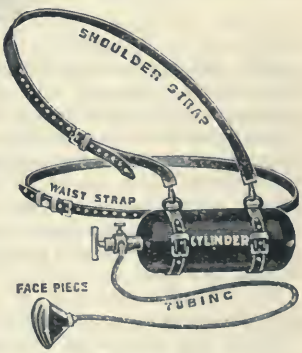


Fig. 98.

Oxygen Warmer. *Herbert J. Robson, M.R.C.S., L.R.C.P.*

It has lately occurred to me that it is by no means good and rational treatment to allow a patient with an inflamed lung to breathe cold—often icy cold—oxygen; and so, with the help of Messrs. Reynolds & Branson I have devised the oxygen warmer here illustrated (*Fig.* 99).

The temperature of oxygen as it issues from the oxygen cylinder is often at freezing-point. After passing through the ordinary rubber tubes and mouth-piece now in use, its temperature has risen to a few degrees above freezing-point; whereas, after passing through the above apparatus, immersed in hot water at 180° F, and the temperature of the room being 62° F, the temperature of the oxygen issuing from the face-piece is 65° F. This temperature can, if desired, be still further considerably raised by making the water hotter in which the warmer stands, or by inserting a moist sponge into the copper cylinder. Or again, if a rubber tube without a bag is carried direct from the outlet-tube to the face-piece, the conditions otherwise remaining as above stated, the temperature of the oxygen issuing from the face-piece registers 85° F.

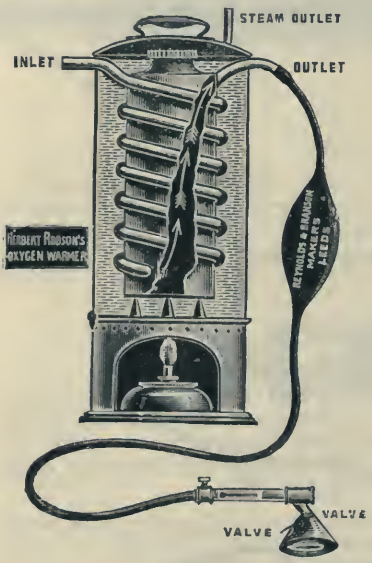


Fig. 99.

The apparatus consists of a copper tube encircling in a series of coils the outside of a copper cylinder, 9 inches in length, 5 inches in diameter, weighted at the bottom. Through this coil from above downwards, passes the oxygen, which enters the cylinder at the termination of the coil near the base, and then travelling up the cylinder to the outlet-tube it here leaves the warmer at the top opposite to the inlet tube. A cap at the top of the cylinder screws off so that, if required, any medicament or a moist sponge may be inserted into the warmer.

Near the face-piece intervenes a glass tube which has a thermometer arranged in it so that the temperature of the oxygen for inhalation can be read at a glance.

The face-piece and bag are somewhat similar to those used in the administration of nitrous oxide gas, only the bag is much smaller.

In the face-piece is an arrangement of two valves: the one opening into the face-piece from the tube allows oxygen to enter the lungs

during inspiration, and at the same time it prevents any undue waste of oxygen by closing during expiration, when the valve which now opens in the side of the face-piece lets out the exhaled air from the lungs. For this idea in connection with the valves I am indebted to Mr. Branson, who, working upon a previous design of Coghill's, has devised a simple and inexpensive face-piece capable of being applied to the above apparatus.

When in use the copper cylinder is placed in a jar or basin of hot water, the temperature of which can be regulated as desired. Or if preferred, as shown in the above diagram, it can be immersed in an outer cylinder or pan containing water kept hot by means of a lamp beneath. Through the lid of this pan leads a tube as an outlet for the steam, which can be conveyed away up the chimney or elsewhere if it is not required in the sick room.

As there illustrated it is shown with the coils of copper tube inside the cylinder. Upon thoroughly testing the apparatus however in actual practice it was found a distinct advantage to have the coils outside the cylinder, and further still the outer pan for hot water in which to immerse the warmer. It is made by Messrs. Reynolds and Branson, of Leeds.

Pessary (Intra-Uterine Stem). — Dr. Fenton has invented a pessary designed to prevent the pains of spasmodic dysmenorrhœa. It consists of a tube about 1½ inches in length, which is intended to be inserted into the cervix uteri. Its uterine extremity is bulbous, the lower extremity flattened. It is well adapted for placing into the cervix and retaining its position. The tube which perforates the instrument is a trifle larger than that which traverses an ordinary tobacco-pipe, and we quite understand that it would admit the passage of blood-serum ; but what is to prevent the blood coagulating in the tube and blocking it, or how a blood-clot is to find its way through it, we fail to understand. Perhaps Mr. Alfred Cox, of 100, New Bond Street, W., who has kindly brought the invention to our notice, will explain it to those interested in this method of treatment.

Phonendoscope.—We briefly alluded to this instrument last year, and we have since given it a very extensive trial, with the result that we should advise every practitioner to possess himself of one. There can be no question that both the heart and lung sounds are heard more distinctly than with the stethoscope, and we think the arrangement by which the ear-pieces are attached to a flexible rubber tube which remains in the ear from its shape, without the pressure of a spring, as in the ordinary bin-aural stethoscope, is better both for the ears and the hearing. Messrs. Sumner & Co., who first brought this instrument to our notice, inform us that they have reduced the price of the instrument. They have also introduced a "purse" for carrying it, which is much more convenient than the box in which it is ordinarily sold.

Messrs. Evens & Pistor also send us a sample of another make of phonendoscope which we have carefully tested and find it works satisfactorily. This instrument is supplied with a pair of elastic

handles, which keep the hands of the operator from coming into direct contact with it, and thus prevent the false sounds apt to be caused otherwise by the muscular motions of the hands in holding it. One of the advantages of the phonendoscope for teaching purposes is that six tubes may be attached to it, whereby six persons can listen at the same time if necessary.

Pneumatic Truss (Phillips').—This is distinctly a pneumatic age, and we only wonder that a pneumatic truss has not followed the pneumatic tyre more speedily. In this truss (*Fig.* 100) not only the pads but the band which encircles the body is an air cushion; and the exact degree of resistance offered is precisely regulated by the degree of inflation. We believe that this truss has a great future before it. It is obvious that an air pad will adapt itself better to the body than the softest padding, and yet will give a greater resistance. It will also permit of a cleanliness previously unknown in trusses. We would suggest that when this appliance is put upon the market, it should have a thin merino wool covering, which could be easily removed for washing purposes, and as the truss is itself washable, it would be much more sanitary than any at present produced. Messrs. Sumner & Co., of Liverpool, have brought this invention to our notice, and we shall watch its progress with interest.

Fig. 100.

Probe (Combination).—This is at once a probe, director, and aneurysm needle in one instrument, and occupies no more space than an ordinary director. It is a very practical arrangement, and likely to prove useful for a number of purposes in minor surgery, and we can strongly recommend it. Messrs. Ferris & Co., Bristol.

Splint for the Treatment of Flexed Joints.—The illustration (*Fig.* 101) shows a splint suggested by Dr. C. H. Savory, of Haverfordwest, which has been found very useful, and productive of good results in the treatment of contraction of tendons.

For a foundation an ordinary straight splint is used, and to one extremity of this a second piece (jointed near the centre) is attached by means of a hinge. This secondary splint may, if it is found more suitable, be made of metal. The second splint is bandaged firmly to the concave side of the affected part and a tourniquet is then applied round *both* splints over the point of the greatest convexity. The screw of the tourniquet is tightened by one or two turns daily, as the case may require, until the second splint comes to lie flat upon the

first. The joint will then be found in the course of a few days, to be perfectly straight and with no tendency to recontraction; that is, of course, unless the contraction is caused by the loss of continuity of an opposing tendon. Instead of a tourniquet an ordinary elastic bandage may be used, the tension with which it is applied being increased

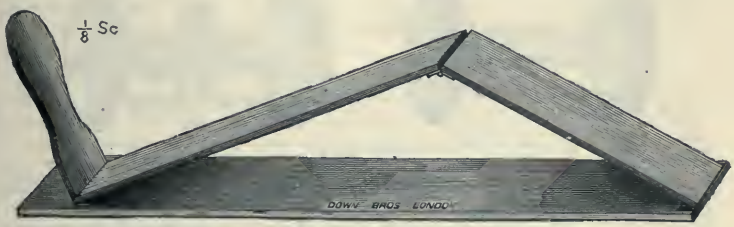


Fig. 101.

daily. An ordinary straight splint is worn for a week or two after the flexion has been reduced. The splint may be adapted to joints other than the knee—*e.g.*, the elbow and phalangeal joints. The splints are made according to measurements by Messrs. Down Bros., 21, St. Thomas's Street, Borough.

Splint Padding.—The Liverpool Lint Co. have forwarded us a sample of their well-known splint padding, to show the improvement in manufacture since we last noticed it, and also inform us that it has been reduced in price.

Sterilizer.—Messrs. Reynolds & Branson, of Leeds, have surpassed themselves in producing a perfect sterilizer (*Fig.* 102), large enough for boiling the midwifery forceps, and equally useful for all other surgical instruments, for seven shillings and sixpence, complete. It contains a perforated tray for lifting out the instruments, and is thus well adapted even for the smallest and most delicate instruments or appliances used in surgical practice. In spite of its cheapness, it is well made, and will stand fire well. We can heartily recommend it to our readers, and at the same time express our appreciation of the efforts of this firm to provide practical appliances at a moderate cost.

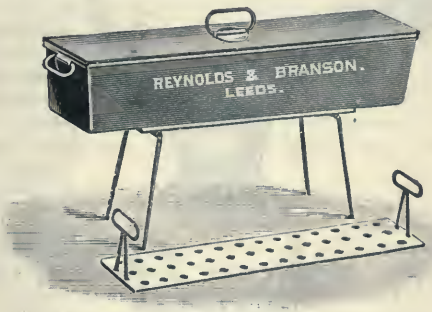


Fig. 102.

Suture Reels.—An improvement in suture reels (*Fig.* 103) has been made by Mr. J. H. Montague, of 101, New Bond Street, W., by the addition of an india-rubber ring at each extremity, which permits them to be thrown upon a table or into the jar or dish for sterilising

Fig. 103.

without fear of breakage. The reels are made either single or double, or to hold any number of different sized sutures. The invention is simple, but meets a practical difficulty. Every surgeon will appreciate Mr. Montague's invention.

Syringe (Evacuating) for Lithotrity Cases.

H. Milton, M.R.C.S., L.S.A., Cairo.

I have had lately made for me an evacuator (*Fig.* 104) which presents certain advantages over those generally used in the operation of lithotrity.

It consists of an indiarubber ball with two necks, one at right angles to the other. The one carries a vulcanite or metal socket to receive the evacuating catheter, the other a glass receptacle for dèbris. This is the whole apparatus; there are no valves, no taps and no detachable portions; the shape is such as to allow of direct filling and cleaning; the action of gravity alone is depended on to prevent the return of dèbris into the bladder and the skill of the operator to obviate any escape of fluid. The simplicity of the apparatus is such as to raise doubts of its efficiency. I have however used it in some hundred lithotrities, removing with it stones of 4, 6 and 8 ounces, and in one case a dense stone weighing 12 ounces. In this case the operation was completed in 125 minutes, being at the rate of 46 grains a minute, a record which but few syringes have surpassed. I can therefore

Fig. 104.

confidently recommend operators to give the instrument a trial, and I think they will find that it possesses the following, among other advantages:—

(1,) It may be very easily and thoroughly sterilized by chemical antiseptics; this point has not, I think, received sufficient consideration, and it is very easy to see that an infected syringe may have a very prejudicial effect on the result of an operation.

(2,) Its shape is such as to allow the operator full control over the movements of the evacuating tube.

(3,) It is greatly cheaper than any other form.

This construction of the syringe is such that it forms practically a handle to the evacuating tube. Under these conditions the exploration of the bladder cavity by the tube is greatly facilitated, and fragments may be readily sought for, identified and removed, either from the general bladder cavity or from sacculations.

The evacuator is made by Down Bros., St. Thomas's Street, Borough, London.

Syringes (Hypodermic).—We have received from Messrs. Joseph Gray & Son, of Sheffield, a new form of hypodermic syringe, which with the exception of the needle is constructed wholly of glass. The piston is a solid glass rod accurately fitting the syringe, and being made of glass this accuracy of fit is not likely to be interfered with by its expansion, as in the syringe fitted with a metal rod, or by corrosion.

Although the syringe has a somewhat fragile appearance, we believe it will outlast a large number of the ordinary type of syringe, and will be always ready for use when wanted, which is the really important part about a syringe. It is packed in a neat metal case, but this is larger than is absolutely necessary, and we think capable of improvement. We are sure Messrs. Gray & Son will attend to this point as the instrument is itself very portable.

Messrs. Ferris & Co. send a full-sized hypodermic syringe with two needles, enclosed in a metal case of tubular shape. It thus occupies a very small space, and is well adapted for slipping under a loop in the ordinary pocket surgical case, where it may be carried without injury. It is always a good plan to give the hypodermic syringe a definite place amongst the instruments in daily use, and which are carried on the round, and this syringe adapts itself well to this purpose. It costs 4/6.

Temperature and Operation Charts.—Prof. Mayo Robson holds that the diagrammatic representation of the pulse, and respiratory curve on charts is quite as important, and in abdominal cases, perhaps more important, than the temperature curve. He has therefore prepared some charts which give the record of temperature, pulse, and respiration in curves (*Fig* 105). They are no more trouble to employ than the ordinary chart, and the advantage of having the information presented in graphic manner, which can be seen at a glance on approaching the patient's bedside, will at once be appreciated. There is only one point in these charts to which the most captious critic could take

exception, viz., that the lowest temperature for which record is provided is 97°F, the lowest pulse rate 70. Personally we do not think that sufficient attention is given to sub-normal temperatures,

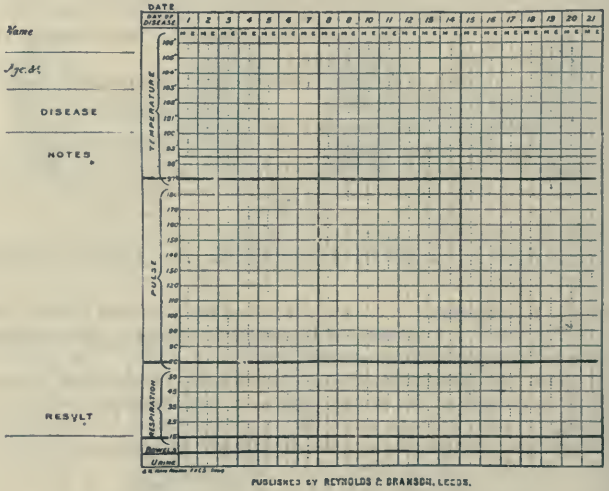


Fig. 105.

and for this reason we mention it. Messrs. Reynolds & Branson, of Leeds, have produced this chart in a particularly clear form, and we cordially recommend its use in every hospital.

The Lamprophone.—This is a very powerful and sensitive telephone, especially constructed for the use of the deaf, so that ordinary conversation can take place without the speaker being close to the listener, and without it being necessary for his lips to be close to the mouth-piece. It could be used for instance by a counsel examining a witness in a court of law. We have not been able to practically test the appliance, but being sold by Messrs. Maw, Son & Thompson, we have no doubt that it will answer well the purposes for which it is intended.

Tongue Depressor (Aluminium).—This is a particularly useful and cheap tongue depressor, consisting of a flat piece of aluminium suitably curved. It is easily cleaned, and will not corrode. Messrs. Ferris & Co., Bristol.

Tonsillotome (A Modified). *W. H. Kelson, M.D., F.R.C.S.*

Messrs. Down Bros., have made for me a tonsillotome (*Fig.* 106), which, while somewhat resembling Mackenzie's, differs from it in the following particulars:—

(1,) The blade is considerably shorter. Having measured the distance from the lips to the posterior border of the tonsil in a large number of cases, I found that this reduction could be made, and yet the most deeply placed tonsil reached with ease.

(2,) The upper end of the handle is made square and blocks into a box attached to the blade instead of screwing in, it therefore cannot possibly rotate, as sometimes happens with the screw, at the critical moment.

(3,) The handle makes an acute instead of an obtuse angle with the blade, whereby the operator's thumb has much greater power in thrusting home the latter.

(4,) It is entirely of metal. The instrument seems to do its work satisfactorily.

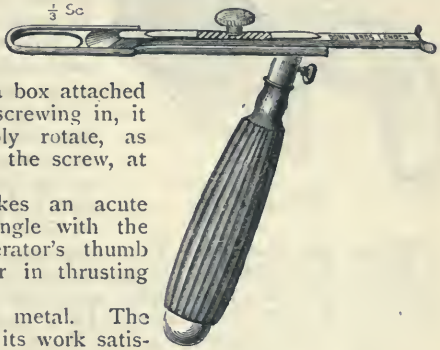


Fig. 106.

Tracheotomy Tube.—Mr. Philip de Santi, F.R.C.S., has directed attention to the imperfect nature of the valve used in tracheotomy tubes, and he has introduced a new form of valve which will be understood from the illustrations (*Figs.* 107, 108).

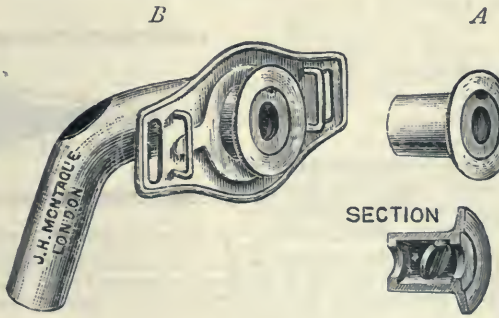


Fig. 107.

Fig. 107 shows the tracheotomy tube and valve fitted together, the chamber and valve by itself and a section of the chamber and valve showing its construction and mode of action. The valve apparatus consists of a small silver chamber, *A*, about half-an-inch long fitting accurately into the cannula, *B*, and open at both ends. Inside this chamber is a small, circular, silver valve working on a hinge, which on inspiration is drawn inwards against the calibre of the chamber, thus permitting free ingress of air, and which on expiration,

vocalisation, or coughing, is driven forwards and comes up tightly against a small silver inner rim, thereby preventing any exit of air, mucus, etc. Great care must be taken to make this valve air-tight.

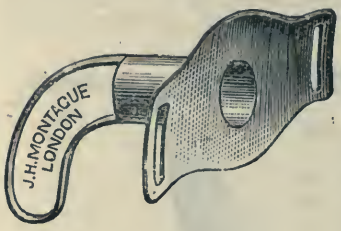


Fig. 108.

This valve may be fitted to any tube, and the illustration (*Fig.* 108) represents a skeleton tube used by Mr. De Santi for a patient who had to wear such an instrument continuously, which gives much greater breathing space than the ordinary tube. It is made by Mr. J. H. Montague.

Trochars and Cannulæ.—This instrument (*Fig.* 109), invented by Dr. Henry FitzGibbon for the performance of paracentesis thoracis, will prove useful for many other operations in which a preliminary exploration is likely to be followed by a cutting operation. The use of the instrument cannot be better described than in Dr. FitzGibbon's own words:

"The difficulty which occasionally arises in deciding with certainty whether a pleuritic effusion has resolved itself into an empyema or not, often places the surgeon in the position of having to withdraw an aspirator cannula in order to open the pleural cavity freely for drainage and irrigation. Once the cannula is withdrawn it is not always easy to get a director to follow the same track into the pleural cavity, as the relative positions of the skin, fascia, and pleura are apt to be altered by the escape of the fluid and by a change in the position of the patient."

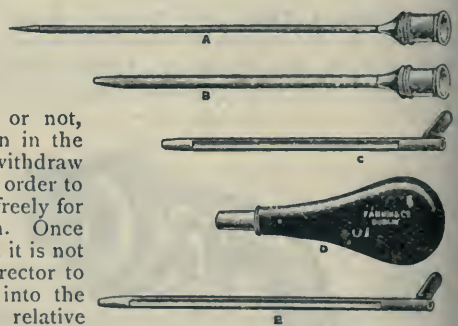


Fig. 109.—*A* represents an ordinary Aspirator Trochar; *B*, the Aspirator Cannula belonging to it; *C*, Cannula with Director Groove made to fit accurately over *A* and *B* together; *D*, The Handle; *E*, Director Cannula, fitting the Trochar *A* only.

In order to obviate this difficulty, Dr. FitzGibbon has designed the instrument represented in the accompanying woodcuts, and he has found it facilitate the introduction of the drainage tubes into the thorax very much, and to enable the operation to be performed much more rapidly than is possible without its aid.

The trochar *A* being put into the cannula *B*, the director cannula *C* is passed over both, and the handle put *in situ*.

A slight skin incision may be made at the point where it is proposed to tap the thorax, and the trochar plunged through in the usual

manner, and then withdrawn, leaving the director cannula in. If the fluid which escapes proves to be serum, it can be allowed to flow off, or be aspirated, as the operator thinks fit, but if it be purulent, and it is necessary to make a free opening for the drainage and irrigation of empyema, the cannula is withdrawn, leaving the grooved director cannula in the cavity, which can be rapidly opened as freely as is thought necessary, by running a bistoury or a scalpel along the director to the stop at the end, and cutting in the direction of the intercostal space as the knife is withdrawn.

E is a director cannula for use in cases where a free opening is to be made without exploration.

Messrs. Fannin & Co., of Dublin, have manufactured the instrument with their accustomed skill, and the whole apparatus, in neat leather case, costs 12/6.

Umbilical Button.—Messrs. Reynolds & Branson, of Leeds, have introduced an umbilical button made in aluminium, which can be either attached to the button by a few stitches for which holes are provided, or applied with plaster. Being made of aluminium, the buttons are of course light, and not likely to tarnish. They cost sixpence each.

Umbilical Pad (Adhesive).—This is a projecting pad, surrounded by layers of rubber or plaster of different thicknesses and covered finally with a plaster and a water-proof backing. It is applied with no other preparation but slight warmth, and exercises firm pressure over the part. The construction of these pads is such as to render them very durable. They will be much appreciated by every practitioner who employs them on account of their great utility and convenience. They are brought out by A. de St. Dalmas & Co., of Leicester, who are famous for their "Leicester Hospital Strapping," which is held in such high esteem by practical surgeons.

Vaccinating Case (Aseptic).—This case (*Fig* 110) contains three vaccinators, made entirely of metal, enabling them to be completely and thoroughly sterilised after each operation. It is a distinct advantage to carry several instruments, as it frequently happens that several members of a family require vaccinating at the same time. It is very portable, and well made by Messrs. Sumner & Co.

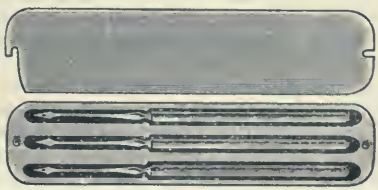


Fig. 110.

Vaporizer (The Arema).—This is a very simple appliance for vaporizing oils in sick rooms. A vessel containing water is so arranged that it can be placed at different heights over a night-light, so that the quantity of vapour given off may be regulated at will. It can either be hung up in the room or placed upon a table or the floor.

The Arema Manufacturing Co., 27a, High Holborn, also sell several combinations of oil suitable for consumptive and other cases.

Fig. 111.

Vaporizer.—This costs a shilling, and provides all that is needed for vaporizing medicaments in a sick room (*Fig* 111). The receptacle is large enough to contain a sufficient supply, which has not been the case with a large number of the cheaper vaporizers which have come under our notice. The heat is supplied by any ordinary night-light. The apparatus is excellently made in spite of its small cost. Messrs. Reynolds & Branson, of Leeds, are the manufacturers.

PROGRESS OF PHARMACY.

Adeps Lanæ Hydrosus.—This is an ointment base of the lanoline type which takes up watery medicaments very readily and is absorbed by the skin better than ordinary ointments. Ferris & Co., Bristol.

Anæsthetic (Tabloids) Schleich.—The system of local anæsthesia by local injections of cocaine, morphine and sodium chloride solutions, as introduced by Dr. Schleich, of Berlin, has been largely adopted in minor surgery. The anæsthetic tabloids (Burroughs, Wellcome & Co.) greatly facilitate the preparation of these solutions and secure uniformity, stability, and absolute sterility. For these reasons anæsthetic tabloids have aided the adoption of Dr. Schleich's method in no small degree. The tabloids are made in 3 strengths—strong, normal, and weak—and, when one of these is dissolved in 100 minims of water a solution is formed respectively of the strengths of Dr. Schleich's.

Anti-diphtheritic Serum.—It has been a matter of surprise to us from time to time to find the apathy with which many who use anti-diphtheritic serum regard the different authoritative statements as to the strength (or want of strength) of different antitoxins on the market. Yet the success or otherwise of the treatment may hinge on a precise acquaintance with the number of antitoxin units contained in a certain quantity of the serum, and the reputation of the physician must be influenced, more or less, thereby, while by the time the serum is found to be ineffectual, the best—or perhaps the only—time for action may be gone. Messrs. Parke, Davis & Co. have undertaken the production of the serum on better lines than have formerly obtained. The health of the horse and its conditions during the process are the subject of careful consideration. The resulting serum can be relied upon to possess the units of strength marked upon

the bottle, and it appears probable that the greater success of the anti-diphtheritic treatment in America than in Great Britain is due to the more scientific and accurate method of preparing the serum adopted by Messrs. Parke, Davis & Co., whose preparation has been employed in the bulk of the cases treated. It has the advantage also of being administrable in doses of 3 to 4 c.c., instead of in doses of 10 to 30 c.c. as required by some other preparations.

Anti-kamnia.—Our attention was first called to this analgesic, which is one of the coal tar derivatives, by an American physician whom we saw in consultation regarding one of his patients who suffered from locomotor ataxy. He told us that nothing had relieved the lightning-pains so well as anti-kamnia which at that time was practically unknown in England. We have since used it repeatedly for the purpose of removing pain, with most satisfactory results. The average dose is only 5 grains, which may be repeated without fear of unpleasant symptoms. Mr. J. M. Richards, of 46, Holborn Viaduct, E.C., whose lacto-peptone holds the premier place amongst the digestive agents, has lately accepted the agency for this drug, and we can, with confidence of its efficacy, recommend it to the profession.

Anti-phthisin (Klebs).—Messrs. Ferris & Co., of Bristol, have accepted the sole agency for this preparation which is claimed to possess considerable powers in checking the tubercular process. It is too early yet to speak decisively as to its action.

Aquæ Chloroformi.—We have frequently noticed preparations made by Messrs. R. Sumner & Co. designed to save labour and expense, and this is another important effort in the same direction. They have succeeded in emulsifying chloroform, thereby increasing its solubility in water and removing the necessity of using spirit. The sample they send us is cloudy and this is the necessary form of the preparation. It requires to be shaken, and then, when a drachm is added to an eight-ounce bottle of water it is at once taken up by the water and forms chloroform water. The practical advantage of this preparation is self evident.

Battley's Solutions are almost a household word in medicine. Their *liq. opii sedativis*, *liq. secalis cornuti* are relied upon in cases of gravity, because they are of an exactly standardized strength, which renders the practitioner sure of the results. Their *liq. pruni serotion* is a reliable method of employing another powerful drug, as each drachm represents 1·5 minims of dilute-hydrocyanic acid. The combination of chloral and pot. brom. is esteemed by many practitioners as superior to the newer hypnotics and we have no doubt that Messrs. *Battley's Liquor Chloral Co.*, which contains these two drugs associated with cannabis indica and hyoscyamus will prove a valuable sedative in many cases, and especially in conditions of nervous excitement. Messrs. Battley have also produced under the name of *Murrol* a highly purified petroleum oil which makes an excellent base for sprays and local applications.

Bromide.—Messrs. Burroughs, Wellcome & Co. prepare a tabloid containing 2 grains each of the bromides of strontium, of sodium, and

ammonium. It is claimed that this is less depressing than the potassium salt. They add to this tabloid a dose of $\frac{1}{10}$ gr. of arsenite of sodium.

Caffeine and Antipyrin.—Tabloids containing caffeine gr. i, antipyrin gr. iii, have been made by Burroughs, Wellcome & Co. as a remedy for migrain and headache. The caffeine is calculated to remove the depressing effects of antipyrin on the heart.

Carbolized Lemon Lozenges.—If any of our readers should be called upon to interview a patient immediately after smoking a cigar, and seek for a means of imparting a more professional "tone" to the breath, they cannot do better than try the carbolized lemon lozenges made by Messrs. Blake, Sandford & Blake, 47 Piccadilly, W. They are actually palatable and the reader will at once recognize their superiority to the carbolic lozenge of the Throat hospital Pharmacopœia. It is not so well known as it should be that carbolic acid, which in large doses is capable of causing great dryness of the throat and congestion of the fauces, will in small doses relieve this condition more rapidly than any other remedy, and these carbolized lemon lozenges answer the purpose most perfectly. They act as an anæsthetic to the mucous membrane, and will frequently relieve a dry, irritating cough.

Colchicine Salicylate Capsule.—The difficulty of administering the above compound, as a remedy in gouty and rheumatic affections, has been overcome by dispensing the same in small capsules, each of which contains $\frac{1}{4}$ of a milligramme $=\frac{1}{240}$ grain chemically pure colchicine dissolved in 20 centigrammes of natural methyl salicylate, from *betula lenta*, equivalent to 5 grains salicylate of soda. The capsules are most elegantly prepared by Geo. Trocher, of Paris, and can be obtained of Mr. B. Kuhn, 36, St. Mary-at-Hill, E.C.

Emol-Keleet Soap.—In a previous issue we described emol-keleet, which is a natural product found at Dunning, in Perthshire. It has a remarkable effect in softening the skin, and has been largely used by eminent dermatologists as a dusting powder. We are not surprised therefore that a soap into which this substance enters is now being put on the market, and from a trial of it we find that it is an important addition not only to soaps for medicinal purposes but also for nursery and domestic use. It renders the skin very soft, and subdues irritation in a remarkable way. The soap is well made, and when better known is bound to have a very extended sale. Messrs. Fassett and Johnson, 32, Snow Hill, E.C., are the London agents.

Eucaine.—This is described as "a synthetic cocain, and, like cocain, a methyl ester of a benzoylated-oxypiperidine-carbo-oxylic acid, and possesses, like cocain, the empirical composition $C_{19}H_{27}NO_4HClH_2O$.

"Pure eucaine is, like pure cocain, very little soluble in water, while the neutral salts are soluble to the extent of 6 per cent.

"Several authors have reported their experiences with this new product, and one of the main advantages in which all agree is that eucaine does not, like cocain, affect the heart's action, and is less toxic than cocain. Clinical experiments have also proved that eucaine is

fully equal to cocain in respect to the rapidity of its development of anæsthesia, and the permanence and intensity of its anæsthetic effect.

"No less important is also the fact that eucaine solutions are absolutely stable, and that they may be sterilized without fear of decomposition of the solutions, which is not the case with cocain."

Eucaine is rather less expensive than cocain, and the reports of its use have been so far satisfactory that it deserves the careful trial it is receiving at the hands of the profession. Messrs. A. & M. Zimmermann, St. Mary-at-Hill, London, E.C., are the British agents.

Messrs. Burroughs, Wellcome & Co. have produced a 1-grain soloid of this drug, which when dissolved in 10 minims of hot water may be used as a local anæsthetic. It is also supplied in tabloids of $\frac{1}{3}$ to 1 grain for hypodermic use.

Euthymol.—Under this name Messrs. Parke, Davis & Co. put up a preparation which contains oil of eucalyptus, oil of gaultheria, F.E. wild indigo, boric acid, menthol and thymol. The result is a very active deodorant and antiseptic of a pleasant and harmless character. It is just the thing to prescribe for a mouth wash in cases of aphthæ or foul breath, or as an injection in cases of catarrh of the mucous membrane. It also forms a very soothing preparation for the skin when excoriated or affected by bites or stings. It is quite non-irritating, and may be injected under the skin when sufficiently diluted.

Ferropyrin.—This is a combination of ferric chloride and antipyrin, the object being to unite the tonic properties of iron with the analgesic effects of antipyrin. Dr. W. Cusbach claims to have used it with good effects in about eighty cases of chlorotic and anæmic girls and women, giving 10 to 15 grains three times a day, with other ingredients. In cases where it appears desirable to use antipyrin to relieve pain, this may be substituted for it, but that antipyrin is in itself a proper agent to employ in ordinary cases of anæmia, is a view which will not be very readily adopted by the profession. Mr. B. Kuhn, 36, St. Mary-at-Hill, E.C., is the British agent for this preparation.

Filmogen.—This is the name given by Dr. Schaff to a solution of nitrated cellulose in acetone which when applied to the skin will immediately cause a flexible film to appear upon the surface, which is not removed by washing or friction. It can be employed either alone or in combination with salicylic acid or other antiseptics. The necessity of some such preparation which will answer the purpose better than flexible collodion is well known, and we are obliged to Messrs. Christy & Co. of 25, Lime Street, E.C., for having brought this preparation to our notice. There are a large number of intractable skin diseases which can be cured if the surface of the skin is protected from the air, and this preparation answers the purpose better than any we have previously employed. The film is easily removable by means of alcohol. Most of the remedies used in dermatological practice are soluble in filmogen to a very considerable extent, such as salicylic acid, resorcin, iodoform, pyrogallol, sublimate of mercury, chrysarobin, cocaine, ichthyol and carbolic acid, while others, such as sulphur,

acetate of lead, oxide of zinc, lead iodide, etc., are easily suspended in this medium.

Glutol.—This is practically a gelatine hardened by formalin and then mechanically pulverized. When brought in contact with the wounds, the compound splits, the gelatine assisting to form new tissue and the formalin acting upon the surroundings of the wounds, preventing inflammation and irritation. A scab is formed within a few hours, and the patient requires no particular treatment. In veterinary practice glutol has been taken up very readily on account of the difficulty of applying bandages on animals. The fact of a scab forming and no pain existing, makes the animal perfectly unconscious of the injury, and does not interfere with the wound by licking or scratching. We are of opinion that there is a considerable future for this substance in surgical treatment, providing as it does a dry antiseptic dressing without, in many cases, the necessity of using a bandage. Messrs. Zimmermann & Co., St. Mary-at-Hill, E.C., are the British agents.

Hæmatic Hypophosphites.—This is a syrup of hypophosphites having the following quantities of hypophosphite salts to the fluid ounce: Potassium, 1½ grains; manganese, 1 grain; strychnine, ⅛ grain; iron, 1¼ grains; calcium, 1 grain; quinine, $\frac{7}{16}$ grain. From this it will be seen that it is a very useful tonic, suitable for all ordinary cases of debility. We note that it is a very clear preparation quite free from deposit, and although Messrs. Parke, Davis & Co. tell us they supply the same preparation with larger doses of the ingredients than above mentioned, we agree with them in considering that this is more likely to meet the conditions. There is no greater mistake than to use tonics in too large doses, in fact, they cease to be tonics directly the dose is increased.

Hæminol.—This is a new ferruginous tonic consisting of hæmoglobin and hæmatin. One part corresponds to about 6 parts of fresh bullocks' blood. It is well known that the ordinary preparations of iron are not absorbed by the blood except to a fractional extent, the improvement they effect is due rather to a chemical action upon the contents of the intestinal canal which allows the natural salts of iron contained in meat, fresh vegetables, etc., to be assimilated. In this preparation we have iron in a form which is possible to be assimilated, and we believe that if used with the food during a course in which the ordinary iron preparations are being administered, it would constitute one of the speediest and most certain methods of removing the anæmic condition. It has been used alone in such cases with excellent results, but we believe that the ordinary salts of iron, such as the ferrous carbonate, and such a preparation as hæminol are both indicated, and each having different work to do they should be given separately, hæminol with the meals, and the ferrous carbonate (pil. Blaud) between the meals Hæminol is very soluble in diluted alcohol, less so in water. It would be an excellent preparation for making an iron wine for consumption with the meals. Messrs. Parke, Davis & Co.

Hazel Dew.—This is the name given by Messrs. Ferris & Co., of Bristol, to a well prepared distilled liquid extract of hamamelis (witch hazel). It is a very valuable addition to all lotions used for wounds, ulcers, or piles, on account of its soothing properties, and used with water (1-6) it will most often form the best application for an irritable skin or mucous membrane.

Hypophosphites.—Under the name *syrupus Hypoflav*, Messrs. Ferris & Co., of Bristol, have introduced a syrup of hypophosphites of a very stable character and at so moderate a cost that it may be prescribed freely for the poorer class of patients. This has been a great want in respect to this particular remedy.

Lithium Salts.—Messrs. Burroughs, Wellcome & Co. have prepared tabloids of the citrate, and the bi-tartrate. These may be taken dry on the tongue, or dissolved in water. It is a decided advantage to be able to administer the citrate of lithia in the dry state and to have it in a portable form.

Medicated Soaps.—Messrs. D. and W. Gibbs, Ltd., of the City Soap Works, 16, Finsbury Circus, London, E.C., deserve well of the medical profession because they prepare soaps containing medicinal substances of exact strength, so that we may always know precisely what we are using. The soap itself is of their celebrated Cameo registered brand, which has long been esteemed by dermatologists, and the following list will show the various combinations available at the present time:—

(1,) *Sulphur* (10 per cent. Sulph. Præcipitat. B.P.)
(2,) *White Birch Tar* (10 per cent. Pix liquida e Betula Alba).
(3,) *Ichthyol & Tar* (5 per cent. Ichthyol Sulph. Amm. and 5 per cent. Pix liq).
(4,) *Eucalyptol* (5 per cent. Ol. Eucalypti rectif).
(5,) *Sulphur, Camphor, Balsam Peru* (5 per cent. Sulph. Præcipit. B.P., 5 per cent. Flor. Camph. B.P. and 3 per cent. Bals. Peru).
(6,) *Corrosive Sublimate* (½ per cent. Hydrarg. Perchlor. B.P.)
(7,) *Borax, Naphthol & Sulphur* "Freckle Soap" (5 per cent. Natr. biborac., 2½ per cent, Naphthol pur., and 10 per cent. Sulph. Præcipit. B.P.)
(8,) *Boracic Acid* (5 per cent. Acid. Boracic. B.P.)
(9,) *Salicylic Acid and Sulphur* (3 per cent. Acid. Salicyl. B.P. and 10 per cent. Sulph. Præcipitat. B.P.)
(10,) *Carbolic Acid* contains 20 per cent. pure Carbolic Acid Crystals.

The same firm also prepare a Superfatted Cold Cream soap, deliciously scented for ordinary toilet purposes, which we consider realizes the highest perfection of the soap-makers' art. It is a luxury to use it.

Nuclein.—From previous reports with respect to the chemical nature of nuclein from yeast,—A. Kossel, "Zeitschr. f. physiolog. Chemie", vol. 3, p. 284; etc.—we learn that investigators were only able to obtain from yeast a nuclein with an amount of phosphorus varying from 3·28 to 3·9 per cent. Encouraged by the excellent results obtained in the treatment of certain diseases by Dr. Vaughan's yeast nuclein solution, Messrs. Parke, Davis & Co. have experimented in their laboratory with a view to obtaining a pure nucleinic acid from yeast, although at first the experiments indicated that success was far

from being assured. They have now prepared a nuclein solution, 5 per cent., for internal use; this solution contains 5 per cent. of nucleinic acid from yeast, and is prepared according to the formula of Drs. Vaughan and McClintock, of the University of Michigan.

Nuclein increases the number of white corpuscles and stimulates the disease-resisting powers of the body, and the consensus of opinion is that the treatment is of great value. Certain cell constituents are said to have the power of rendering inoperative the attempts of pathogenic germs to multiply in what has been described as the best of all culture media, namely, the human body, and it is most likely by its action principally on such cell constituents that nuclein produces its peculiar action, although it is itself a non-poisonous germicide, as found in various vegetable and animal cells, also in blood serum, the bactericidal properties of which are due to this constituent.

Nuclein has been employed with benefit in initial stages of tuberculosis, streptococcus diphtheria, typhoid fever, malaria, membranous tonsillitis, etc., and Messrs. Parke, Davis & Co. prepare a 1 per cent. solution for hypodermic use and a 5 per cent solution for administration *per os*, the last-mentioned preparation being preferred.

Palatinoids.—Messrs. Oppenheimer, Son & Co. have not failed to keep in touch with the needs of the members of the profession, who greatly appreciate the convenience and exactitude of their "palatinoid" method of administering medicine. They now furnish a complete collection of organic extracts done up in this form, and selected with all the care which the firm give to their pharmaceutical productions. By this method they are able to render the bulk of the dose very much smaller than is possible by any other method; thus 5 grains of the fresh thyroid gland are compressed into a palatinoid about the size of a split pea. The great convenience and portability, as well as the ease in administration, is a recommendation in favour of the palatinoid method.

What to us is a new departure is the use of liquid substances in the palatinoid form. We have received samples of palatinoids of the ordinary size containing 5 minims of ether, and others containing 5 minims of chloroform, other smaller ones containing: creasote, 1 minim; guaiacol, 2 minims; amyl nitrite, 2 minims; eucalyptol, 1 minim. The elegance of these preparations is beyond improvement, and we must regard this as one of the most distinct advances in pharmacy of modern times. We know how difficult it is to keep ether and chloroform in an ordinary bottle for any length of time without evaporating, and the fact that it can be put up in a thin gelatine capsule in divided doses, which can be carried in the pocket without deterioration, is a decided advantage to the profession, and we must compliment Messrs. Oppenheimer on their achievement.

Pellotini Hydrochloridi.—We gave an account in our last edition of the peculiar effects produced by the *anhalonium Lewinii*, which has a certain amount of hypnotic effect, and requires further investigation. Messrs. Burroughs, Wellcome & Co. have put up the alkaloid *pellotini*

hydrochloridi in the form of tabloids for hypodermic use, the dose being ½ grain.

Saxol Emulsion.—This is a petroleum emulsion made from saxol which is an exceedingly pure preparation of petroleum introduced by Messrs. Ferris & Co., of Bristol. It may be either used internally in the ordinary way for cases of consumption and wasting disease, or may be used as a spray by means of the saxol atomiser (*q.v.* p. 639) introduced by the same firm.

Sea Salts (Stoddart).—We have received from Messrs. A. & J. Warren, of Bristol, a sample of Stoddart's sea salts, which are very valuable for stimulating the skin and increasing the tonic effects of baths. The great point about these salts is their ready solubility, by which much trouble is saved in use. Careful analysis shows that they contain all the essential qualities of sea-salts and can be recommended for general use.

Soap (Ethereal Antiseptic).—Johnson's ethereal antiseptic soap is a solution of antiseptic soap in ether, and is intended for cleansing the skin of the parts before operating, and for cleansing the operator's hands. It has been used in the United States to cleanse the skin before vaccinating and similar purposes. It is made by Messrs. Parke, Davis & Co., London.

Soaps.—Samples of coal tar, carbolic and olive, and palm-oil soaps have reached us from Messrs. A. & J. Warren, of Bristol, and after careful examination we find that they are well made and correspond to the description given, and may be used with every confidence.

Stypticin.—The use of stypticin is based on the experiments of Gottschalk who found that it promptly checks hæmorrhage resulting from pure uterine subinvolution, that is, that due to muscular atony and not to retention of membranes. Stypticin has also been successfully used in menorrhagia, in fungous endometritis as an adjuvant to the curette; also in the bleeding caused by fibroids. In purely congestive menorrhagia it has been used effectively in combination with hydrastin. Stypticin is a coined name for hydrochloride of cotarnin, one of the oxidation products of the opium alkaloid narcotin. Burroughs, Wellcome & Co. have prepared tabloids for administration both hypodermically and by the mouth, the former containing ¼-grain and the latter ¾-grain each.

Syrup Chloride of Iron (Weld).—This is a syrup, one ounce of which represents forty drops of tinc. of iron chloride (U.S.P.) the primary idea of which is to overcome the excessive acidity of the chloride preparation. It is made by Messrs. Parke, Davis & Co.

Taka-Diastase.—We referred to this new digestive ferment in a former edition, and we have since then given it a fair trial in practice, and find that in certain cases where pepsin and pancreatin have failed, it has done good service. It is probable that the artificial supply of the natural digestive ferments, pepsin and pancreatin, may check the secretion of these ferments by the stomach, because it is an

invariable physiological law that the organs will not do work that is done for them, but by introducing a natural diastase we merely aid the digestive organs by transforming the crude starch into a soluble form which enables the natural ferment to act upon it with greater advantage. Taka-diastase, as compared with the best extract of malt is about 100 times more powerful as a diastatic agent. Thus a dose of 1-5 grains taken with meals is sufficient, and as it is tasteless and put up in the pellet form by the manufacturers (Messrs. Parke, Davis & Co.) it is very convenient in use, and dyspeptic patients should be allowed the advantage of trying it even before the better known digestive ferments, because it neither directly nor indirectly can cause the slightest ill effects.

Tannalbin.—This is practically a tannate of albumen which has been submitted to a high temperature. It is used as an intestinal astringent, being particularly valuable for this purpose as it is not soluble in the gastric juice. It has been used with great success by Dr. Von Engell, of the General Hospital of Bruenn, in cases of chronic intestinal catarrh and also in tuberculous diarrhœa. It is well worthy of a careful trial at the hands of the profession, who can obtain it from Mr. B. Kuhn, 36, St. Mary-at-Hill, E.C.

Thyradin.—This is a preparation containing both the active principles to which the efficacy of the thyroid gland is supposed to be due, and in the proportions in which they appear in the natural gland; in other words, it is a combination of the thyro-antitoxin of Dr. S. Frankel, and the thyro-codein of Prof. Baumann. As to whether it will yield the same clinical results as the extract of thyroid can only be tested by careful experiment. If it does so, the preparation has many advantages on account of its greater convenience and improved taste. Mr. B. Kuhn, of 36, St. Mary-at-Hill, E.C., is the British agent.

DIETETIC PREPARATIONS.

Apenta Water.—The Apollinaris Co. have recently introduced a natural aperient water from Hungary under the above name. The value of this water has been testified to by eminent pharmacologists. The nature of the Hungarian bitter water springs is well known; it is, therefore, advantageous to be assured authoritatively that the working of the "Apenta" water springs is placed under direct independent scientific and hygienic control and supervision, and is, consequently, carried on in a scientific manner.

Borthwick's Bouillon.—A very pleasant, portable and inexpensive bouillon has been introduced by Messrs. F. L. Borthwick & Co., of 381, Kingsland Road, E.C. It is rich in nourishing and flesh-forming constituents, and contains a certain proportion of mineral matter. It will be found very useful for domestic purposes, and also as an agreeable restorative for invalids during convalescence.

Farola.—This excellent farinaceous food is made in three grades (fine, medium and large) so that it adapts itself to many purposes, from an infant's food to a breakfast porridge for adults. It can be used for custards and blanc-mange, or take the place of vermicelli in soups. It is a very practical addition to the invalid dietary, and being a thoroughly reliable preparation, may be freely recommended by the profession. Mr. James Marshall, of Glasgow, is the manufacturer.

Kydde's Food.—This is an infant's food, designed to bring the constitution of the child's nourishment as nearly as possible to the ideal of human milk. It appears as a fine white powder and has a pleasant taste. It appears to be liked by children, and they thrive upon it. We may regard it as an important addition to our resources. It is made by Kydde & Co., 9, Southwark Bridge Road, S.E.

Maltine with Coca Wine.—This is an excellent combination of two useful remedies. While the coca wine provides the stimulation necessary in cases of exhaustion, the maltine affords nourishment, helps digestion, and vastly improves, or shall we say, disguises the flavour of the coca wine. The Maltine Manufacturing Co., 24 and 25, Hart Street, Bloomsbury, recommend that it be taken with or after meals. We think that its pleasant bitterness would make it a useful appetizer taken ½ hour before meals and also a particularly valuable restorative between meals. We feel sure that our readers who try it will find it a very useful agent in a large number of cases of debility, and we think the majority of patients will appreciate it.

Marza Wine.—This is a combination of port wine, phosphorus, coca, and pepsine, and is designed as a tonic and an aid to the digestive process. It is decidedly of a more palatable character than many medicinal wines, and appears to be well adapted to meet the needs of invalids who require a stimulating beverage which can be readily digested. Made by the Marza Manufacturing Company, of Finsbury, E.C.

Meat Jellies.—Messrs. Brand & Co., whose essences of meat are a household word, have made a new departure in the production of chicken and mutton jellies which are about three times the strength of ordinary jellies of the kind. They form a very convenient food for invalids as they are always ready for immediate use, and being more palatable than many concentrated meat preparations, and absolutely reliable, will be much appreciated in the sick room.

Nestlé's Milk Food.—Nestlé's condensed Swiss milk is well known to the profession. Mr. Henri Nestlé has recently introduced a milk food which is made on the following principle. Milk is concentrated in vacuo at a low temperature, so as to preserve its original qualities unchanged. To this concentrated milk a little sugar and some wheat flour are added. The wheat flour has been previously submitted to a special process of baking by which the insoluble portions are excluded; the product thus obtained acts as a solvent upon the casein and prevents the milk from curdling in large lumps, thus rendering the whole compound, which is of the highest nutritive value,

as digestible as mother's milk. In spite of the professional prejudice against giving farinaceous food to infants before the secretion of the salivary glands is established, there can be no question that some infants when artificially fed will not digest cows' milk however carefully it is prepared, and that they do better when well cooked flour is added. Nestlé's Milk Food appears admirably adapted for such cases, and is well worthy of a trial at the hands of the profession.

Triticine.—We cannot regard this as a new preparation because we have had considerable and favourable experience of it, but we can say that it is one of the most satisfactory of the farinaceous foods, being both palatable and sustaining, and well deserves the good opinions it has earned from those who are particularly concerned with the management of children. It is made by Triticine, Ltd., Castleford Mills, Castleford.

Vin-Kafra.—This is a wine containing the active properties of *sterculia acuminata*. Fresh nuts are alone used in the manufacture, thus preserving all the qualities some of which are lost in the dried nuts. The action of the fruit of this plant has been investigated by Drs. Leon Monnet, Dujardin-Beaumetz, and others, who claim that it not only has stimulant effect upon the circulation, but that it restrains tissue waste. It is also said to have some aphrodisiac power and to have been used with success in the treatment of chronic alcoholism. A very small quantity quenches thirst, so that it is well adapted as a beverage during severe muscular exertion such as cycling. As a tonic wine for general use during illness and convalescence, it will probably gain a high place as its taste is not unpleasant and the effects are satisfactory. The wine is made by the Mead Manufacturing Co., Messrs. Scott & Bowne, of 47, Farringdon Street, E.C., being the British agents.

Vitalia.—A sample of this beef juice reached us early in the year, and having tested the statement made by the manufacturers, The Vitalia Co., Holborn Circus, that it contained 20 per cent. of albumin, and found it correct, and being pleased with the taste and the moderate price at which it is sold, we determined to give it an extended trial in our practice. The result has been so satisfactory that we can recommend it to our readers with the positive assurance that they will be pleased with it.

Personally we attach but little importance to the chemical criterion in pronouncing upon the value of a food. Chemically, one preparation may appear more nutritious than any other product of its kind, but clinically we know that when we have a patient suffering from severe exhaustion it is raw beef juice which will give us the results we require. It is not that chemistry is at fault, but a very incomplete statement of chemical facts in certain journals has induced very erroneous notions upon the subject.

It is not the quantity of albumin in the beef juice, but its form upon which the effects depend. The same applies to the salts of iron and phosphorus which raw meat juice contains; we might

add ten times the quantity artificially, and it would look well displayed in a chemical table, but not one particle of these added salts would be assimilated. We have all to deal with patients who are suffering from the too extended use of cooked foods; in the process of cooking the natural salts and albumin are so altered that they are not readily assimilated. The nervous debility, the sleeplessness and other symptoms of the patient may be due entirely to the fact that the salts wanted to recuperate the nervous system are not supplied although plenty of cooked food is taken. It is under such circumstances that a preparation like vitalia can be prescribed in place of an ordinary tonic. It can be given at night in place of a sleeping draught in many cases, and in every case when the patient wakes after a few hours sleep it is one of the best remedies we have employed. We speak with the greatest confidence because of the very large number of cases in which we have used this preparation, and the satisfaction it has given.

Bovril—and Bovril for Invalids.—We have received samples of these excellent preparations, which have been noticed in previous editions. The latter is specially prepared for use in the sick room.

MISCELLANEOUS.

Book Slide.—We have received from Mr. Andrew Baird, 37, 39, Lothian Street, Edinburgh, his "Lothian" book slide—a handy, strong, and at the same time good looking article. It is made entirely of metal, and the necessary expansion is effected by means of two pairs of gun metal tubes sliding in each other. It will be found extremely useful in any surgery or library, and after much personal use we can thoroughly recommend it. The ends are more rigid than the usual pattern wooden slides, and give all the strength required even when drawn out to their greatest capacity. The cost is 5s.

Cholera-belted Combination Garment.—This is an arrangement of the ordinary "combinations" worn by ladies, with a thickening of the material over the abdominal organs, in fact a cholera-belt without the trouble or inconvenience of the extra garment (*Fig* 112). In the ordinary vest and drawers the garments overlap one another over the abdominal region, and the extra warmth thus obtained is lost in the combination garments, so that this arrangement, which Mr. Fred. Penberthy, of 390-392, Oxford street, London, has patented, is one to be recommended for ordinary ladies wear. The garments are particularly well made and will give satisfaction.

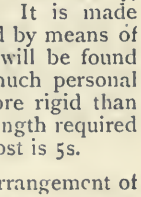


Fig. 112.

Another very practical invention of the same manufacturer is a "combination" garment having supports placed over the abdominal region, precisely similar to those used in an ordinary abdominal belt, and taking the place of one. As these supports can be taken out and replaced at will, no difficulty occurs in the washing of these garments

We all know the difficulty in making an abdominal belt that will retain its position, but by this very clever plan this trouble is entirely removed, and so far as we can judge, it will meet the requirements of most cases where abdominal belts are necessary.

Clark's Patent Siphon Stove (for Gas or Oil).—We have pleasure in drawing attention to this stove (*Fig.* 113) which, although not quite a novelty, is yet new to our pages. Where it is not convenient to make a fire in a sick room, and where even a flue may not be available, such a stove as the "siphon" is invaluable. Burning without a flue, the heat rises first to the top of the stove; passing thence down the side tubes, the products of combustion are so cooled as to become condensed and fall into a tray under the stove in the form of water, which requires daily removal. The result is a comfortable and wholesome warmth, without smell or other unpleasant effect, and as all the heat is utilized, the stove must be economical in burning.

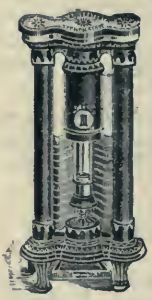


Fig. 113.

There is a receptacle for water at the top whenever a moist atmosphere is desired, but ordinarily this will not be needed for we do not find the unpleasant dryness of the air common to so many gas stoves. The only trouble we experienced was from the disagreeable smell of the japan when first using the stove. This soon disappeared, however, and we are pleased to learn that Messrs. Clark now make it a rule to burn the stoves continuously for some hours before they leave the factory, and they will take especial care in the case of invalids to deliver them free from all smell. For hall, surgery, and sick room use they may be strongly recommended. Made by Messrs. S. Clark & Co., Siphon Works, Park Street, Islington, N.

Lunatic and Idiot Asylums and Homes for Inebriates in Great Britain and Ireland.

We are very anxious to make this list complete, and to give all necessary information; but unless our circular of enquiry—*which in every case is stamped for reply*—is promptly returned, we cannot undertake the responsibility of inserting particulars of an Establishment which may have been closed.

ABERDEEN.—*Royal Asylum.* Res. Med. Sup., Wm. Reid., M.D.; Treasurer, Wm. Carnie, 27, Exchange Street. Access—Aberdeen Station, 1 mile.

ABERGAVENNY.—*Joint Counties Asylum.* Res. Med. Sup., James Glendinning, M.D. Access—G.W.R. Station, ½ mile; L. and N.W. Station, ¾ mile.

ARGYLL and BUTE.—*District Asylum*, Lochgilphead. Res. Med. Sup., J. Cameron, M.D. Access—Rail to Greenock, thence by Steamer to Ardrishaig, 2½ miles distant.

ARMAGH.—*Course Lodge*, Richhill, 5 miles from Armagh (for ladies only). Proprietors, James and Wm. Orr; Visiting Physician, R. Gray, F.R.C.P.,I. Access—Richhill Station, thence by own Conveyance, 2 miles. *Further information on page* 793.

District Asylum. Res. Med. Sup., Dr. W. Graham.

The Retreat. Proprietors, A. D. Allen & Sons. (For 21 male and 15 female patients, higher and middle class.) Res. Med. Sup., Dr. J. Gower Allen. Access—Richhill, thence cab 1½ miles.

AYR.—*District Asylum.* Res. Med. Sup., C. H. Skae, M.D. Access—Ayr Station, 2 miles.

BALLINASLOE (Co. Galway).—*District Lunatic Asylum.* Res. Med. Sup., R. V. Fletcher, M.D.; Asst. Med. Offs., John Mills, M.B., and P. J. Quinlan, L.R.C.P.I. Access—Ballinasloe.

BANFF.—*District Asylum*, Ladysbridge. Res. Sup., David Fowler. Visiting Physician, Wm. Ferguson, M.D. Access—Ladysbridge Station.

BARNOLDSWICK (Yorkshire).—*Greta Bank.* Prop., Mrs. Parker. Access—Bentham Station, 2 miles.

BASCHURCH (Shropshire).—*Boreatton Park*, 10 miles from Shrewsbury. Res. Med. Sup., Dr. Sankey. Access—Baschurch Station. *Further information on page* 800.

BATH.—*Bailbrook House.* Prop. and Res. Med. Sup., Lionel A. Weatherly, M.D. Access—Bath, 15 minutes' drive. *Further information on page* 792.

BEDFORD.—*Bishopstone House*, Ashburham road (for 10 females). Prop. and Med. Sup., Wm. Simpson Craig, M.D. Access—Midland Railway, Bedford. *Further information on page* 794.

Springfield House Asylum; 1 hour from London. Res. Med. Sup., D. Bower, M.D. Access—Bedford, 1½ mile. Mid. & L. & N.W. Railway. *Further information on page* 791.

BELFAST.—*Belfast District Lunatic Asylum.* Res. Med. Sup., A. S. Merrick, M.D. Access—Belfast.

Glenside House, Ballysillan. Res. Med. Prop., Dr. C. J. Milligan. Access—Belfast, 3 miles.

BEVERLEY.—*East Riding County Asylum.* Res. Med. Sup., M. D. Macleod, M.B. Access—Beverley Station, 2 miles.

BIRMINGHAM.—*Birmingham City Asylum*, Winson Green. Res. Med. Sup., E. B. Whitcombe. Access—Winson Green, ½ mile, Soho, ¼ mile.

BODMIN.—*Cornwall County Asylum.* Med. Sup., Dr. R. Adams.

BOX (Wilts).—*Kingsdown House*, 5 miles from Bath. Res. Med. Sup., Dr. H. C. MacBryan. Access—Box.
Further information on page 791.

BRENTWOOD.—*Essex County Asylum.* Res. Med. Sup., Dr. G. Amsden. Access—Brentwood, ½ mile.

BRIDGEND.—*Glamorgan County Asylum.* Res. Med. Sup., H. T. Pringle, M.D. Access—Bridgend, 1½ miles.

BRISTOL.—*Brislington House*, 2½ miles from Bristol. Res. Med. Supt., Dr. B. B. Fox. Access—Brislington, 1⅓ miles.

City and County Asylum, Fishponds. Res. Med. Sup., Harry A. Benham, M.D. Clerk, Arthur Orme. Access—Fishponds Station, 1 mile.

Northwoods House, Winterbourne, 7 miles from Bristol. Props., Reginald Eager, M.D., and T. G. Seymour. Res. Med. Sup., Reginald Eager, M.D. Access—Cab from Bristol, or from Fishponds, Yate, or Patchway Stations. *Further information on page* 796.

BROMSGROVE.—*Birmingham City Asylum*, Rubery Hill, Barnt Green, Worcester. Res. Med. Sup., A. C. Suffern, M.D. Access—Rubery Station.

BURGESS HILL.—*St. George's Retreat*, Ditchling. Res. Med. Off., Dr. John A. Cones. Access—Burgess Hill Station.

BUXTON.—*Wye House.* Res. Phys., F. K. Dickson, F.R.C.P. Access—Buxton.

CAMBRIDGE.—*County Asylum*, Fulbourn. Res. Med. Sup., E. C. Rogers, M.R.C.S. Access—Cambridge, 3 miles.

CANE HILL, Purley (Surrey).—*London County Asylum*, near Croydon. Res. Med. Sup., Dr. J. M. Moody. Access—Coulsdon Station 10 minutes.

CARLISLE.—*County Asylum.* Res. Med. Sup., J. A. Campbell, M.D Access—Carlisle, 3 miles.

CARLOW.—*District Asylum.* Res. Med. Sup., Dr. T. P. O'Meara. Access—Carlow.

CARMARTHEN.—*Joint Counties Asylum.* Res. Med. Sup., Edwin Goodall, M.D. Access—Carmarthen, 2 miles.

CASTLEBAR (Co. Mayo).—*District Asylum*, near Athlone. Res. Med. Sup., Dr. G. W. Hatchell. Access—Castlebar, 1 mile.

CHARTHAM (Near Canterbury).—*Kent County Asylum.* Res. Med. Sup., G. C. FitzGerald, M.D. Access—Chartham Station, 1 mile.

CHEADLE.—*Manchester Royal Lunatic Hospital.* Res. Med. Sup., G. W. Mould, M.R.C.S. Access, Cheadle, 2 miles.

CHESTER.—*Cheshire County Asylum.* Med. Sup., A. Lawrence, M.D.

CHURCH STRETTON.—*Stretton House*, Shropshire, (for gentlemen). Access—Church Stretton Station, 1 mile.

The Grove House (for ladies). Res. Prop., Mrs. McLintock. Med. Sup., Horatio Barnett, M.A., M.B. *Further information on page* 799.

CLONMEL.—*District Asylum.* Res. Med. Sup., Dr. W. H. Garner. Access—Clonmel, 1 mile.

COLCHESTER.—*Eastern Counties Idiot Asylum.* Res. Med. Attend., R. C. Kirkby, M.R.C.S. Eng., L.R.C.P. Lond.; Res. Sup. and Sec., John J. C. Turner. Payment cases received from all parts. Election cases only from Eastern Counties. Access—Colchester, adjoining.

CORK.—*District Asylum.* Accommodation for 1,200 patients. Res. Med. Sup., Oscar Woods, M.D. Access—Cork, 2 miles.

Lindville. Prop., J. Osborne.

CUPAR (Fifeshire).—*Fife and Kinross District Asylum.* Med. Sup., A. R. Turnbull, M.B. Access—Springfield Station.

DARLINGTON (Durham).—*Dinsdale Park.* Res. Med. Sup., J. W. Eastwood, M.D., M.R.C.P., Lond. Access—Darlington, 5 miles; Dinsdale, 1 mile.

DARTFORD.—*City of London Asylum*, Stone. Res. Med. Sup., Dr. E. W. White. Access—South Eastern Railway, Dartford, 1½ miles.

DENBIGH (North Wales).—*North Wales Counties Lunatic Asylum.* Med. Sup., Dr. Llewelyn F. Cox. Access—Denbigh, 1 mile.

DERBY.—*Borough Asylum*, Rowditch. Res. Med. Sup., Dr. Macphail. Access—Great Northern Station, 1 mile; Mid., 2 miles.

County Asylum, Mickleover. Res. Med. Sup., Dr. Lindsay. Access—Derby, 5 miles, Mickleover, 2 miles.

DEVIZES.—*Wilts County Asylum.* Res. Med. Sup., John Ireland Bowes, M.R.C.S. Access—Devizes, 1 mile.

DORCHESTER.—*Dorset County Asylum.* Med. Sup., P. W. MacDonald, M.D. Access—Dorchester, 3 miles.

Further information on page 795.

DOWNPATRICK.—*District Asylum* (for 540 patients). Res. Med. Sup., M. J. Nolan, L.R.C.P., I., and L.M. Access—Downpatrick Station, 1 mile.

DRUMCONDRA (Co. Dublin).—*Hartfield Retreat.* Med. Prop., Dr. Lynch. Vis. Phys., Dr. Matthew Burke Savage. Access—Dublin, 2 miles.

DUBLIN.—*Bloomfield*, Morehampton Road. Vis. Phys., Henry T. Bewley, M.D., F.R.C.P.,I. Access—Dublin, 1 mile.

Farnham House and Maryville, 3 miles from Dublin (for 56 patients, both sexes). Prop. and Res. Med. Sup., A. Patton, M.B. Asst. Med. Sup., W. R. Dawson, M.D. Access—Cab from Dublin Station, 3 miles.

Highfield (for ladies). *Hampstead* (for gentlemen). Drumcondra. Med. Prop., John Eustace, M.D. Med. Sup., Hy. M. Eustace, B.A., M.D. Access—Amien's St., Dublin. *Further information on page* 790.

House of St. John of God, Stillorgan. Vis. Phys. Dr. T. McEvoy. Access—Stillorgan Station, ½ mile. From Dublin 5 miles.

Richmond District Asylum. Res. Med. Sup., Dr. C. Norman.

St. Patrick's Hospital. Med. Sup., Dr. J. Maloney.

Verville, Clontarf, near Dublin. Med. Prop., Dr. Lynch.

Woodbine Lodge, Rathfarnam, 6 miles (ladies). Prop., Mrs. Bishop. Med. Sup., Dr. A. Croly. Access—Rathfarnam Tram, 2 miles.

DUDLEY (Stafford).—*Ashwood House*, Kingswinford, Props., Drs. Peacock & Pietersen. Res. Med. Sup., Dr. Pietersen. Access—Stourbridge Junction, 3 miles, or Dudley Station, 4 miles; Wolverhampton, 7 miles. *Further information on page* 794.

DUMFRIES.—*Crichton Royal Institution.* Med. Sup., James Rutherford, M.D. and F.R.C.P.E., etc. Access—Dumfries, 1 mile.

DUNDEE.—*Royal Asylum*, Westgreen. Res. Med. Sup., James Rorie, M.D. Access—Dundee, 3 miles; Liff, 1½ miles.

DURHAM.—*County Asylum*, near Durham. Res. Med. Sup., Robert Smith, M.D. Access—Sedgefield Station, 3 miles, thence by 'Bus.

EARLSWOOD.—*Asylum for Idiots.* Res. Med. Sup., Dr. Charles Caldecott. Males 400, females 200. Admission by election or payment of 50 to 200 guineas per annum. Apply to Sec., 36, King William Street, London Bridge, E.C. Access—Earlswood Station, close to the Asylum; Red Hill Junction, 1½ miles. Open for inspection Tuesdays between 11 and 5 o'clock.

EDINBURGH.—*Mavisbank House*, Polton, Midlothian. Res. Med. Sup., G. R. Wilson, M.D. Access—Polton Station, North British Railway, 5 minutes' walk. *Further information on page* 796.

Midlothian and Peebles District Asylum. Res. Med. Sup., R. B. Mitchell, M.D. Access—Rosslynlee Station, 1 mile.

Mollendo House, Musselburgh. Prop. and Res. Med. Sup., A. W. Mackenzie, L.R.C.P.,Ed. Cons. Phys., J. H. Horsburgh, M.B., C.M., B.Sc. Access—Musselburgh Station, 10 minutes' walk.

Royal Edinburgh Asylum, Morningside. Res. Phys. Sup., T. S. Clouston, M.D., F.R.C.P., Ed. Access—Edinburgh, 1½ miles.

Saughton Hall. Res. Med. Sup. and Prop., Dr. John Batty Tuke, M.D., F.R.C.P., Ed. Access—Gorgie Station, 15 minutes.

ELGIN.—*District Asylum.* Med. Sup., J. W. N. Mackay, M.D. Access—Elgin, ¼ mile.

ENNIS.—*District Asylum.* Res. Med. Sup., Richard Phillips Gelston, L.R.C.S., I., L.R.C.P., I. Access—Ennis Station, 1¼ miles.

ENNISCORTHY (Co. Wexford).—*District Lunatic Asylum.* Res. Med. Sup., Thomas Drapes, M.B. Access—Enniscorthy, 1 mile.

EPSOM (Surrey).—*Church Street* (for 14 ladies). Res. Med. Sup., Dr. W. Clement Daniel. Access—L.B.S.C.R. within 10 minutes' walk.
Further information on page 798.

EXETER.—*City Asylum*, Heavitree. Res. Med. Sup., R. L. Rutherford, M.D. Access—Exeter, L. and S.W.R., 3 miles; G.W.R., 4 miles.

Court Hall, Kenton. Prop., Mr. Mules. Access—Starcross, 1 mile.

Devon County Asylum, Exminster. Med. Sup., G. Symes Saunders, M.D. Access—Exminster Station, 1 mile; Exeter, 4 miles.

Wonford House (Hospital for the Insane). Res. Med. Sup., P. Maury Deas, M.B., M.S. Lond. Access—Exeter Stat. (Queen St.) 1½ miles; (St. David's), 2 miles. *Further information on page* 797.

FAIRFORD (Gloucestershire).—*Fairford Retreat.* Res. Med. Prop., Daniel Iles, M.R.C.S. Access—Fairford Station.

GATESHEAD.—*Dunston Lodge Asylum*, Newcastle and Gateshead. Props., Messrs. Garbutt & Smith. Res. Licensee and Sup., Dr. R. G. Smith. Access—Newcastle-on-Tyne Station, 3 miles.

GLASGOW.—*Baronry Parochial Asylum*, Lenzie. Med. Sup., Robt. Blair, M.D., C.M. Access—Lenzie Station, 1 mile; Glasgow, 8 miles.

District Asylum. Res. Med. Sup., James H. Skeen, M.B. Access—Bothwell and Fallside Stations, ½ mile; Glasgow, 9 miles.

District Asylum and Insane Hospital, Gartloch. Med. Sup., L. R. Oswald, M.B. Access—Gartloch, 1 mile.

Govan Parochial Asylum, Merryflatts. Med. Sup., W. J. Richard, M.B.

Greenock Parochial Asylum, Smithson. Med. Off., J. Wallace, M.D,

Lanark County Asylum, Hartwood. Med. Off., Dr. A. C. Clark.

Royal Asylum, Gartnavel, Glasgow. Res. Phys. Sup., D. Yellowlees, M.D., LL.D.

GLOUCESTER.—*Barnwood House.* Res. Med. Sup., J. G. Soutar, M.B., C.M. Access—Gloucester, 2 miles.
Further information on page 797.

Gloucester County Lunatic Asylums, Wotton and Barnwood, Gloucester. Res. Med. Sup., F. Hurst Craddock, M.A. Oxon, M.R.C.S. Access—Gloucester Station, 1 mile.

GOUDHURST (Kent).—*Tattlebury House* (for 6 males and 2 females). Med. Sup., J. S. Newington. Access—Goudhurst, 1 mile.

GREAT YARMOUTH.—*Royal Naval Hospital.* Dr. John Wilson, R.N., Fleet Surgeon in charge. Access—Great Yarmouth Station, ½ mile. For Naval patients only, admitted by Admiralty order.

GUERNSEY.—*St. Peter Port Asylum.* Med. Sup., Dr. C. Crewe.

HADDINGTON.—*District Asylum*, 17 miles from Edinburgh. Med. Sup., J. Bruce-Ronaldson, M.D., F.R.C.S., E., etc. Access—Haddington Station, 10 minutes' walk.

HARPENDEN (Herts.)—*Harpenden Hall*, 4 miles from St. Alban's (for 13 ladies). Prop. and Med. Sup., A. H. Boys, M.R.C.S., L.R.C.P., Ed. Res. Med. Sup., Dr. H. Fraser. Access—Harpenden Station.

HATTON (near Warwick).—*County Asylum.* Res. Med. Sup., Alfred Miller, M.B. Access—Hatton Station, 2 miles; Warwick Station, 3 miles.

HAYWARD'S HEATH.—*East Sussex County Asylum.* Res. Med. Sup., C. E. Saunders, M.D. Access—Hayward's Heath Station, 1½ miles.

HENLEY-IN-ARDEN (Warwickshire).—*Glendossil* (for both sexes). Res. Prop., Dr. S. H. Agar. Access—Henley-in-Arden, G.W.R., ½ mile.

HEREFORD.—*County and City Asylum.* Med. Sup., C. S. Morriman, L.R.C.P., Ed. Access—Hereford, 3 miles.

HITCHIN (Herts), near.—*Three Counties Asylum.* Res. Med. Sup., E. Swain, L.R.C.P. Access—Three Counties Station, 1 mile.

HULL.—*Borough Asylum.* Res. Med. Sup., J. Merson, M.D. Access—Willerby Station, 1 mile.

Craven Street Retreat, Sculcoates. Prop., J. Brown. Access—Hull, 1 mile.

INVERNESS.—*District Asylum.* Med. Sup., John Keay, M.D.; Asst. Med. Off., W. C. Hossack. Access—Inverness, 2½ miles.

IPSWICH.—*Borough Asylum.* Med. Sup., Dr. E. L. Rowe. Access—Ipswich, 2 miles.

ISLE OF MAN.—*Lunatic Asylum*, Union Mills. Med. Sup., W. Richardson, M.D. Access—Douglas, 3 miles.

ISLEWORTH (Middlesex).—*Wyke House.* Res. Prop., Dr. F. Murchison. Access—Isleworth, Brentford, Osterley Stat., 1 mile.

IVYBRIDGE (Blackadon).—*Borough Asylum.* Res. Med. Sup., Dr. A. N. Davis. Access—Kingsbridge Road, and Ivybridge 1½ miles.

JERSEY.—*The Grove.* Res. Med. Prop., Francis Neel Gaudin, M.P.C., M.R.C.S. Eng., L.S.A. Lond. 2½ miles from St. Heliers, 2 from St. Aubin's. Access—G.W.R., *via* Weymouth, 4½ hours rail from London, and 5½ hours sea passage; per L. and S.W.R., *via* Southampton, 2 hours rail and 8 hours sea passage.

Jersey Asylum. Med. Supt., G. Moore, M.D.

KILKENNY.—*District Asylum.* Res. Med. Sup., Dr. Wm. Z. Myles. Access—Kilkenny, ½ mile.

KILLARNEY.—*District Asylum.* Res. Med. Sup., Dr. L. T. Griffin. Access—Killarney Station, ½ mile.

KNOWLE (near Fareham).—*County Asylum.* Med. Sup., T. B. Worthington, M.D.

LANCASTER.—*County Asylum.* Res. Med. Sup., David M. Cassidy, M.D., D.Sc. Access—Lancaster Station.

LEEDS (near Menston). *West Riding Asylum.* Res. Med. Sup., Dr. McDowall. Access—Menston, 1 mile.

LEICESTER.—*Borough Asylum.* Res. Med. Sup., J. E. M. Finch, M.D. Access—Humberstone G.N.R. ½ mile.

Leicestershire and Rutland Asylum. Res. Med. Sup., R. C. Stewart, M.R.C.S. Access—Leicester town, 1 mile.

LETTERKENNY and LONDONDERRY.—*Donegal District Asylum.* Res. Med. Sup., Edward E. Moore, M.D. Asst. Med. Off., J. C. Martin, L.R.C.S.I. Access—Letterkenny and Lough Swilley Railway, ½ mile.

LICHFIELD.—*County Lunatic Asylum*, Burntwood, near Lichfield. Res. Med. Sup., James Beveridge Spence, M.D. Access—Lichfield City Station, 3½ miles; Trent Valley Station, 4½ miles; Hammerwich, 1½ mile.

LIMERICK.—*District Asylum.* Res. Med. Sup., Dr. E. D. O'Neill. Access—Limerick Station, ½ mile.

LINCOLN.—*County Asylum*, Bracebridge. Med. Sup., J. W. Marsh, M.R.C.S. Access—2½ miles from railway station.

The Lawn. Res. Med. Sup., Arthur P. Russell, M.B. Access—Lincoln Station, 1 mile. *Further information on page* 799.

LIVERPOOL.—*Shaftesbury House.* Near Liverpool and Southport. Res. Med. Sup., Stanley A. Gill, B.A., M.D., M.R.C.P., Lond. Access—Formby Station, ¼ mile distant. *Further information on page* 789.

Tue Brook Villa, 3 miles from Liverpool. Res. Med. Sup., Geo. Duffus, M.B. (For 52 males and females.) Access—Tue Brook Stat. *Further information on page* 792.

LONDON.—*Bethlem Royal Hospital*, St. George's Road, London, S.E. Res. Med. Sup., R. Percy Smith, M.D., F.R.C.P. *Further information on page* 793.

Bethnall House, Cambridge Road, N.E. Res. Med. Sup., J. Kennedy Will, M.D. Access—Railway Station near East London Museum.

Brooke House, Upper Clapton. Props., Mr. H. T. Monro and Dr. J. O. Adams; Res. Med. Sup., Dr. J. O. Adams. Access—Clapton.

Camberwell House, S.E. Prop., J. H. Paul, M.D. Res. Med. Sup., Frank Schofield, M.D. Asst. Med. Offs., F. H. Edwards, M.D., and Norman Lavers, M.R.C.S.

Chiswick House, Chiswick, and 30, Queen Anne St., W. Res. Lics., T. Seymour Tuke, M.A., M.B., M.R.C.S., and C. M. Tuke, M.R.C.S. Access—Chiswick Station, ¾ mile; Turnham Green Station, ⅓ mile.

County Asylum, Colney Hatch, N. Med. Sup., W. J. Seward, M.B. Access—New Southgate, G.N.Rly.

Featherstone Hall, Southall. Med. Lic., Miss H. E. Dixon. Res. Med. Sups., Drs. G. F. Blandford and Graves Burton. Access—Southall Station, 5 minutes' walk.

Flower House, Catford, S.E. Res. Med. Sup., C. A. Mercier, M.B. Access—C. and D. Rly., Beckenham Hill, 5 minutes' walk. *Further information on page* 799.

Grove Hall, Bow (both sexes). Med. Lics., Mr. Byas and Dr. Mickle. Access—Bow Road and Bow Stations, ⅛ mile.

Hallifond House, Sunbury-on-Thames, S.W. Res. Med. Sup., W. J. H. Haslett, M.R.C.S., L.R.C.P. Access—Sunbury Station, 1¼ mile. *Further information on page* 796.

Hayes, Wood End House (ladies). Uxbridge, 3 miles, London, 12 miles. Med. Lic., Dr. H. Stilwell. Access—Hayes Station, 1 mile.

Hayes Park, Hayes, Middlesex, near Uxbridge. Proprietress, Mrs. Benbow. Access—Hayes Station, 2 miles.

Hendon Grove Asylum (for ladies), Hendon, Middlesex. Res. Med. Lic., H. Hicks, M.D. Access—By Mid. Rly., Hendon Station, ½ mile, or 'Bus from Swiss Cottage, St. John's Wood, N.W.

Hoxton House, London, N. Res. Med. Sup., John F. Woods. Access—Shoreditch Station, two minutes' walk; Liverpool Street Station, ten minutes' walk.

London County Asylum, Banstead, S.E., near Sutton. Res. Med. Sup. T. C. Shaw, M.D. Access—Belmont Station, ½ mile; Sutton Station, 1½ mile.

London County Asylum, Cane Hill, Purley, Surrey. Med. Sup., Dr. J. M. Moody.

London County Asylum, Claybury, Woodford, Essex. Med. Sup., R. Jones, M.D.

London County Asylum, Hanwell, W. Res. Med. Sup., R. R. Alexander, M.D.

Middlesex County Asylum, Tooting, S.W. Med. Sup., H. G. Hill, M.R.C.S. Access—Wandsworth Common Station, 1 mile.

Moorcroft House, Hillingdon (males). Uxbridge, 2 miles, London, 13 miles. Med. Licensee, Dr. Stilwell. Access—West Drayton Station, 2 miles.

Newlands House, Tooting, Bec Road, S.W. Prop., Dr. H. Sutherland. Res. Med. Supt., E. T. Hall, M.R.C.S.

Northumberland House, Green Lanes, N. Prop., A. H. Stocker, M.D. Res. Med. Sup., G. E. Mould, M.R.C.S. Access—Finsbury Park Station, 1 mile.

Otto House, 47, North End Road, Hammersmith, W. Med. Sup., Dr. H. Sutherland. Access—West Kensington Station, ¼ mile.

Peckham House, Peckham, S.E. Prop., Alonzo H. Stocker, M.D. Res. Med. Sup., Harold C. Halsted, M.D. Access—Peckham Rye Station, 10 minutes' walk. *Further information on page* 798.

Peterborough House, Fulham. Res. Med. Sup., Dr. James Robt. Hill. Access—Parsons' Green or Chelsea Station, 5 minutes' walk. *Further information on page* 794.

St. Luke's Hospital, Old St., E.C. Res. Med. Sup., G. Mickley, M.B.

Sutherland House, Surbiton, nr. Kingston-on-Thames (ladies). Res. Med. Sups., Robt. Collum, M.D. Access, Surbiton, ¼ mile.

The Huguenots, East Hill, Wandsworth, S.W. (ladies). Licensee, Mrs. Leech. Med. Off., Dr. G. F. Blandford. Access—Clapham Junction Station, 10 minutes; Wandsworth, 3 minutes.

The Priory, Roehampton, S.W., near Richmond. Res. Med. Sup., James Chambers, M.D. Access—Barnes Station, 8 minutes' walk.

Vine Cottage, Norwood Green, Southall. Prop., Mrs. Oliver. Med. Sup., Dr. H. J. Thornton. Access—Southall Station, 1 mile.

LONDONDERRY.—*District Asylum.* Res. Med. Sup., Dr. Hetherington.

MACCLESFIELD.—*Parkside Asylum.* Res. Med. Sup., T. Steele Sheldon, M.B., Lond. Access—Macclesfield Station, 1 mile.

MAIDSTONE.—*Kent County Asylum.* Res. Med. Sup., F. Pritchard Davies, M.D. Access—Maidstone Station, 1½ miles.

West Malling Place (for ladies). *Castle House* and *Winthies Cottage* (for gentlemen). Res. Med. Sup., Dr. James Adam. Access—Malling Station, 1 mile.

MARKET LAVINGTON (Wilts).—*Fiddington House.* Prop. and Res. Med. Sup., C. Hitchcock, M.D. Access—Devizes, 6 miles.

MARYBOROUGH (Queen's County). *District Asylum.* Med. Sup., Dr. J. H. Hatchell.

MELROSE, N.B.—*Roxburgh District Asylum.* Res. Med. Sup., J. C. Johnstone, M.D. Access—Melrose, 1 mile.

MELTON.—*Suffolk County Asylum*, Melton, near Woodbridge. Res. Phys. and Sup., Wilson Eager, L.R.C.P. Access—Melton Station, 1¼ mile; Woodbridge Station, 2¼ miles.

MONAGHAN (Ireland).—*District Asylum*, Res. Med. Sup., Dr Edward Taylor. Access—Monaghan, ¼ mile.

MONTROSE, N.B.—*Montrose Royal Lunatic Asylum.* Phys. Sup., J. C. Howden, M.D. Access—Hillside Station, ¼ mile; Dubton Station, 1 mile.

MORPETH.—*Northumberland County Asylum.* Res. Med. Sup. Thos. W. McDowall, M.D. Access—Morpeth Station, 1 mile, by 'Bus.

MULLINGAR.—*District Asylum.* Res. Med. Sup., Dr. A. D. O'C. Finegan. Access—Mullingar Station, 1 mile.

NELSON (Lanc.).—*Marsden Hall* (for both sexes). Res. Prop., Mrs. Bennett; Med. Sup., Dr. A. P. Millar. Access—Nelson or Colne Stations, 1½ miles.

NEWCASTLE-ON-TYNE.—*City County Asylum*, Gosforth. Res. Med. Sup., Jas. Thomas Callcott, M.D. Access—Newcastle, 1 mile.

NEWTON-LE-WILLOWS.—*Haydock Lodge Asylum.* Med. Prop., E. H. Beaman, M.R.C.S., Ed.; Res. Med. Sup., Dr. C. T. Street. Access—Newton-le-Willows Station, 2 miles.

Further information on page 795.

NORTHAMPTON.—*Berrywood Asylum.* Res. Med. Sup., R. Greene, F.R.C.P., Ed. Access—Castle Station, 2 miles: Midland Station, 2½ miles.

St. Andrew's Hospital. Med. Sup., J. Bayley, M.R.C.S.

NORWICH.—*Heigham Hall.* Licensees, Mrs. Watson and Mr. Alfred Mottram. Res. Med. Sup., Thos. J. Compton, M.D. Access—Norwich Station, ¼ mile; Thorpe Station, 1½ miles.

Norfolk County Asylum, Thorpe. 850 Beds. Res. Med. Sup., David G. Thomson, M.D. Access—Norwich (Thorpe) Station, 2½ miles.

Norwich City Asylum, Hellesdon, near Norwich. Res. Phys. and Sup., Wm. Harris, M.D., F.R.C.S.; Hon. Con. Phys., Sir Frederic Bateman, M.D., F.R.C.P.; Res. Asst. Med. Officer, Dr. A. Sykes. Access—Thorpe, cab fare 4/-; Victoria Station, cab fare 3/6; City Station, fare 3/-; Hellesdon Station, 1 mile.

The Bethel Hospital for the Insane. Res. Med. Sup., J. Fielding, M.D.; Con. Phys., Sir Frederic Bateman, F.R.C.P. Access—Thorpe Station, 1 mile.

NOTTINGHAM.—*Borough Asylum*, Mapperley Hill. Med. Sup., E. Powell, M.R.C.S.

Notts County Asylum, Snenton. Res. Med. Sup., Dr. A. Aplin. Access—Mid. and Gt. North. Station, about 15 minutes' walk.

The Coppice. Res. Med. Sup., W. B. Tate, M.D. Access—Mid. and Gt. North. Station, 2½ miles.

OMAGH.—*District Asylum.* Res. Med. Sup., Geo. E. Carre, M.B. Access—Omagh Station, 2 miles.

OXFORD.—*Oxford County Asylum.* Res. Med. Sup., R. H. H. Sankey, M.R.C.S. Access—Littlemore Station, G.W.R.

Warneford Asylum, Oxford 1½ mile (for private patients only), Res. Med. Sup., J. Bywater Ward, M.D. Access—Oxford Station, 2¼ miles. *Further information on page* 793.

PAISLEY.—*Abbey Parochial Asylum.* Med. Sup., T. Graham, M.D. *Parochial Asylum*, Riccartsbar. Med. Sup., D. Fraser, M.D.

PERTH.—*District Asylum*, Murthly. Med. Sup., Geo. M. Robertson, M.B., F.R.C.P., Edin.

James Murray's Royal Asylum (for private patients only), Perth. Access—Perth, under 2 miles. *Further information on page* 798.

PLYMOUTH.—*Plympton House*, Plympton, S. Devon. Res. Med. Sup., Charles Aldridge, M.D. Access—Plympton, 1 mile; Mills, 2 miles. *Further information on page* 795.

PORTSMOUTH.—*Borough Asylum*, Res. Med. Sup., B. H. Mumby, M.D., D.P.H. Access—Fratton Station, 1½ miles.

PRESTWICH (near Manchester).—*County Asylum.* Res. Med. Sup., Henry R. Ley, M.R.C.S.

RAINHILL (near Liverpool).—*County Asylum.* Res. Med. Sup., J. Wiglesworth, M.D. Access—St. Helen's, 2½ miles; Rainhill Station, 1 mile.

ROTHERHAM (Yorkshire).—*The Grange*, near Rotherham, 5 miles from Sheffield (for ladies). Res. Med. Prop., C. Clapham, M.D. Access—Grange Lane Station, ¼ mile.

SALISBURY.—*Fisherton House Asylum.* Med. Sup., William Corbin Finch, M.D. Access—Salisbury Stat., 5 minutes' walk.

Laverstock House. Prop., J. Haynes; Med. Sup., Hy. J. Manning, M.R.C.S.

SHREWSBURY.—*Salop and Montgomery Counties Lunatic Asylum.* Res. Med. Sup., Arthur Strange, M.D. Access—Shrewsbury Station, 2½ miles.

SLIGO.—*District Asylum.* Res. Med. Sup., Dr. Joseph Petit. Access—Midland, Great Western and Sligo, Leitrim and Northern Counties Railways, Sligo Station, 1½ miles.

STAFFORD.—*County Lunatic Asylum.* Res. Med. Sup., Dr. J. W. Stirling Christie. Access—Stafford Station, about 1 mile.

Institution for the Insane, Coton Hill. Res. Med. Sup., Dr. R. W. Hewson. Access—Stafford, 1 mile.

STARCROSS (near Exeter).—*Western Counties Idiot Asylum.* Res. Sup., Wm. Locke. Access—Starcross Station, 5 minutes' walk.

STIRLING.—*District Asylum.* Med. Sup., Dr. J. MacPherson.

ST. LEONARDS-ON-SEA.—*Ashbrook Hall*, Hollington (for ladies). Res. Props., Mrs. Hitch and Miss Adams. Res. Sup., Dr. Edgar Duke. Access—Station, Warrior Square, St. Leonards, half-hour's walk.

STONE (near Aylesbury).—*Bucks County Asylum.* Res. Med. Sup., J. Humphry, M.R.C.S. Access—Stone, 3 miles from Aylesbury.

SUTTON (Surrey).—*Chalk Pit House.* Prop., F. D. Atkins, M.R.C.S.

TAMWORTH (Staffs.).—*The Moat House* (for ladies). Res. Prop., E. Hollins, M.A. Med. Attendants, J. Holmes Joy, M.D., and C. N. Thomas, M.B. Access—Tamworth, ¾ mile.

Further information on page 804.

TICEHURST (Sussex).—*Asylum.* Props., H. F. H. Newington, M.R.C.P., and A. S. L. Newington, M.B.

TONBRIDGE.—*Redlands.* Res. Sup., W. A. Harmer, surgeon. Access—Tonbridge Station, 2½ miles.

VIRGINIA WATER.—*Holloway Sanatorium, Hospital for the Insane.* St. Ann's Heath, Virginia Water. Res. Med. Sup., Sutherland Rees Philipps, M.D. Asst. Med. Officers, W. D. Moore, M.D., T. E. Harper, L.R.C.P., Rosina C. Despard, M.B., and N. E. Thomas, L.R.C.P. Chaplain, Rev. I. Peck, M.A. Treas., John Ashby, Esq., Staines. Access—Virginia Water Station, 5 minutes' walk. Seaside Branch, Hove Villa, Dyke Rd., Brighton. Med. Off., E. N. Edwards, M.R.C.S.

WADSLEY (near Sheffield).—*South Yorkshire Asylum.* Res. Med. Sup., W. S. Kay, M.D. Access—Wadley Bridge, 2 miles.

WAKEFIELD.—*West Riding Asylum.* Res. Med. Sup. and Director, W. Bevan Lewis, L.R.C.P., Lond. Access—Kirkgate and Westgate Stat., 1 mile.

WALLINGFORD (Berks).—*Berks County Asylum.* Res. Med. Sup., J. W. A. Murdoch, M.B. Access—Cholsey, 1 mile.

WARWICK.—*Midland Counties Idiot Asylum*, Knowle. Res. Sup. and Sec., W. G. Blatch; Med. Officer, R. H. Foster, M.R.C.S. Access—Knowle Station, ½ mile.

WATERFORD.—*District Asylum.* Res. Med. Sup., Dr. R. Atkins. Access—Waterford and Kilkenny Railway Station, about 2 miles.

St. Patrick's Institution, Belmont Park. Sup., Br. W. J. Becker. Med. Sup., Dr. W. R. Connolly.

WELLS.—*Somerset and Bath Asylum*, Wells, Somerset. Res. Med. Sup., A. Law Wade, M.D. Access—Wells, 2 miles; Masbury, 2½ miles.

WHITCHURCH (Salop).—*St. Mary's House* (ladies only). Res. Med. Sups., S. T. Gwynn, M.D., and C. H. Gwynn, M.D. Access—Whitchurch Station, 1 mile.

WHITEFIELD (near Manchester).—*Overdale.* Res. Med. Sup., James Holmes, M.D. Access—Prestwich and Whitefield Stations, 1½ miles each; Molyneux Brow, ¼ mile.

WHITTINGHAM (near Preston).—*County Asylum.* Res. Med. Sup., Dr. Frank Perceval. Access—Grimsargh Station, 1¾ miles; Whittingham Station, 3 minutes.

WINCHELSEA (Sussex).—*Periteau House*, near Hastings (ladies, 5 only), Proprietress, Mrs. R. V. Skinner. Med. Sup., E. W. Skinner, M.D. Access—Winchelsea Station, 1 mile.

WOKING.—*Surrey County Asylum*, Brookwood. Res. Med. Sup., Dr. J. E. Barton. Access—Brookwood Station, 1¼ miles.

WORCESTER.—*County and City Lunatic Asylum*, Powick. Res. Med. Sup., E. Marriott Cooke, M.B. Access—Worcester, 4½ miles.

YORK.—*Lawrence House* (for 8 males and 14 females). Prop. and Med. Sup., G. I. Swanson, M.D. Access—York.

North Riding of Yorkshire Asylum. Res. Med. Sup., J. Tregelles Hingston. Access—York, 2 miles.

The Friends' Retreat. Res. Med. Sup., Bedford Pierce, M.D., M.R.C.P., Lond. Access—York Station, 1 mile.

York Lunatic Asylum, Bootham. Res. Med. Sup., C. K. Hitchcock, M.D., M.A., Cantab. Access—York, 1 mile.

TRAINING INSTITUTIONS.

CHILCOMPTON (near Bath).—*Downside Lodge.* Med. Sup., Alex. Waugh, M.D. Access—Chilcompton Station, about ¼ mile.

Further information on page 804.

DUBLIN.—*Stewart Institution*, Palmerstown, Chapelizod, Co. Dublin. For imbecile children. Med. Sup., Dr. F. Pim.

DUNDEE.—*Baldovan Asylum.* For the Training and Education of Imbecile Children. Matron, Miss Butter. Vis. Phys., Dr. Greig. Access—Baldovan, 1 mile.

KINGSTON-ON-THAMES (Surrey).—*Conifers*, for the education and care of girls needing special oversight under medical guidance. Med. Sup., Dr. Langdon Down. Access—Hampton Wick Station, 8 minutes' walk.

Further information on page 801.

Normansfield. A Training Institution and Home for backward and feeble-minded children and adults of either sex. Med. Sup., Dr. Langdon Down. Access—Hampton Wick, 5 minutes' walk.

Further information on page 801.

Trematon, for the education of boys unsuited by mental or moral weakness for an ordinary school. Med. Sup., Dr. Langdon Down. Access—Hampton Wick Station, L. & S.W.R., 5 minutes' walk.

Further information on page 801.

Winchester House, Kingston Hill. Training Institution for backward and feeble-minded children. Res. Med. Supt., Dr. Fletcher Beach. Access—Norbiton Station, Sth. West. Rail., 15 minutes' walk.
Further information on page 803.

LANCASTER.—*Royal Albert Asylum* (for idiots and imbeciles of the Northern counties. For 600 patients). Principal and Sec., James Diggens. Res. Med. Sup., T. Telford-Smith, M.A., M.D. Admission by election, or at various rates of payment. Access—Lancaster, 1 mile.

Brunton House, a Home for special Private Pupils under training at the Royal Albert Asylum. Private Pupils received from all parts of the country. Principal and Sec., James Diggens. Access as above.

LARBERT (Stirlingshire).—*Scottish National Institution.*

MAIDSTONE (Kent).—*Bearsted House.* School and Home for the Feeble-minded. Res. Sup. and Prop., G. T. A'Vard. Access—Bearsted Station (Chatham and Dover Railway), 5 minutes' walk.
Further information on page 802.

POLTON (Midlothian).—*Mavisbank.* Home and School for imbeciles. Med. Sup., W. W. Ireland, M.D.

RICHMOND (Surrey).—*Ancaster House.* Richmond Hill. An Educational Home for backward and mentally-feeble children (*not* idiots). Res. Med. Sup., G. E. Shuttleworth, B.A., M.D. Access—Richmond Station, L. & S.W.R., Metropolitan, District and North London Railways, 1 mile.
Further information on page 804.

SOUTHGATE (Middlesex).—*Brook House.* Home for Education and Training of the nervous and backward. Res. Med. Prop., Harry Corner, M.D.
Further information on page 813.

Homes for Inebriates.

Homes marked thus (*) are licensed under the Inebriates Act.

The patient must sign a Form expressing a wish to enter the retreat, before two magistrates. This can be done at the private residence of the patient, or at the retreat. Two friends must also sign a declaration that they consider the patient an "Inebriate" within the meaning of the Acts.

BRISTOL.—*Dunmurry*, Sneyd Park, near Clifton. Res. Med. Prop., Dr. James Stewart, B.A., F.R.C.P.Ed., and Mrs. Stewart. Access—Bristol or Clifton Down Station, 1¼ mile from the latter.
Further information on page 800.

Kingswood Park. Res. Med. Sup., Hy. Summerhayes, M.R.C.S. Access—Mangotsfield 2 miles; Bristol 4 miles; Bath 8 miles.

CROYDON.—*St. Raphael's*, Woodside. Apply Rev. A. Tooth. Access—Woodside Station, Croydon.

EARL'S COLNE (Essex).—*Buxton House* (for ladies). Prop., Miss Pudney; Med. Attendant, J. Taylor, M.R.C.S. Access—Colne, 2 miles; Chappel, 3 miles.

FOLKESTONE.—**Capel Lodge* (Near Folkestone.) Res. Prop., E. Norton, M.D. Access—Folkestone Junction, 2 miles.

KINGSLAND (Herefordshire).—**Street Court.* Res. Med. Sup and Partner, Dr. W. F. Walker, J.P. Number of patients limited to 10. Access—Kingsland Station, 1½ miles; Leominster, 6 miles.

LEICESTER.—*Melbourne House* (for ladies). Prop., Mr. H. M. Riley. Med. Attendant, C. J. Bond, F.R.C.S.

Tower House (for ladies). Prop., Mrs. Theobald. Med. Attendant, Dr. Clarke. Access—Leicester Station, 1½ miles.

MANCHESTER (near).—*The Grove*, Fallowfield.

MIDDLESEX.—**High Shot House*, Twickenham. Res. Med. Sup., F. H. Bromhead, B.A., M.B. Camb., M.R.C.S. Eng., L.R.C.P. Lond. Access—St. Margaret's Station from Waterloo, 300 yards.

Further information on page 798.

RICKMANSWORTH (Herts).—**Dalrymple Home* (for 20 male patients). Res. Med. Sup., R. Welsh Branthwaite, L.R.C.P. Access—Rickmansworth Station, Metropolitan Rly., ½ mile; L. & N.W. Rly., 1 mile.

Further information on page 797.

STONEHAVEN (N.B.).—*Elsick House.* Prop., D. Forbes.

SYDENHAM.—*Women's Temperance Home, The Tor.* Hon. Sec., Mrs. Atkinson. Med. Sup., Dr. Gardner.

WALSALL.—**Old Park Hall Retreat.* Birmingham, 6 miles. Res. Med. Sup., Fredk. John Gray. Access—Walsall Station, 1¾ mile.

WEST DERBY (near Liverpool).—*Vergmont Sanatorium.* Sup., Miss Mary M. Hocking. Hon. Med. Offs., Dr. H. Harvey and Dr. C. Thurstan Holland. Access—West Derby, ¼ mile; Tue Brook, ¼ mile; Edge Hill, 3 miles.

WESTGATE-ON-SEA.—**Tower House Retreat* (for ladies and gentlemen). Principal and Licensee, A. F. Street, M.A., M.D. Access—5 minutes' walk from Westgate-on-Sea Station.

Hydropathic Establishments of Great Britain.

We wish to make this list complete, but it is impossible when some Proprietors do not return out letter of enquiry which is *stamped for reply*. This will account for some omissions in the present edition.

ABERDEEN.—*Deeside Hydropathic Establishment*, Heathcot, near Aberdeen.—Res. Med. Sup., Alexander Stewart, M.D., LL.D., F.S.Sc. Access—Rail to Aberdeen, thence by cab or omnibus. Hydropathic conveyance meets any train when sent for, distance 5 miles.

Further information on page 808.

BASLOW (near Chesterfield). *Baslow Hydropathic Establishment*, near Chatsworth Park, Derbyshire. Res. Med. Sup., E. M. Wrench, F.R.C.S. Access—Bakewell Station, 4 miles by omnibus.

BATH.—*West of England Hydropathic Establishment*, Limpley Stoke, near Bath. Res. Phys., C. J. Whitby, M.D. Access—Limpley Stoke Station.

BEN RHYDDING.—*Ben Rhydding.* Near Leeds, Bradford, or Harrogate. Phys., Thos. Johnstone, M.D., M.R.C.P. Access—Ben Rhydding Station, a few hundred yards.

BISHOPS-TEIGNTON (near Teignmouth).—*The South Devon Health Resort.* Prop., C. F. Carpenter. Med. Sup., F. Cecil H. Piggott, M.D. Access—Teignmouth Station, 2½ miles.

BLACKPOOL.—*Bramald's Hydropathic Establishment*, 2 Brunswick Street. Prop., W. Bramald. Access—4 minutes from Central Station.

BORTH (Cardiganshire).—*Hydropathic Establishment.* Med. Sup., J. Harden Jones, M.R.C.S.

BOURNEMOUTH (Hampshire).—*Bournemouth Hydropathic Establishment.* Res. Prop., Dr. Watson. Access—Bournemouth, East Station, 1½ mile; West Station, ½ mile.

Southcliffe. Res. Manager, E. P. Philpots, M.D.

Further information on page 808.

BRIDGE OF ALLAN.—*Bridge of Allan Hydropathic Co.* Manager, J. M'Kay. Access—Bridge of Allan Station, ½ mile.

BRISTOL.—*The Bristol Hydropathic Establishment* (formerly Bartholomew's Turkish Baths), College Green. Res. Phys., W. J. Spoor, M.B., M.R.C.S.

BUTE.—*Kyles of Bute Hydropathic*, Port Bannantyne, Buteshire. Man., A. Menzies; Med. Sup., Dr. A. J. Hall. Access—Clyde Steamers call daily.

BUXTON.—*Buxton House Hydropathic*, adjoins "The Peak Hydro." Cons. Phys., S. Hyde, M.D. Distance from Station, 4 minutes.

Buxton Hydropathic and Winter Residence. Prop., Mr. H. Lomas. Access—Buxton Station, 4 minutes' walk.

CLEVEDON (near Bristol).—*Clevedon Hydropathic Establishment.*—Sup., R. P. Morgan. Access—Clevedon, ½ mile.

Further information on page 807.

COLWYN BAY (North Wales).—*Colwyn Bay Hydropathic and Winter Residence.* Med. Sup., Dr. W. M. V. Williams. Access—Colwyn Bay Station, 7 minutes' walk.

CORK.—*St. Ann's Hill Hydropathic.* Res. Phys., M. Altdorfer, M.D. Access—Blarney Station, 2½ miles distant; Muskerry Light Railway from Cork, Station on grounds.

Further information on page 809.

CRIEFF.—*Strathearn House*, Crieff. (17 miles from Perth). Res. Med. Sups., Thos. H. Meikle, M.D., J.P., and T. Gordon Meikle, M.B., C.M. Access—Crieff Station, 1 mile.

DUNBLANE.—*Dunblane Hydropathic*, Perthshire. Res. Phys. Access—Dunblane Station.

Further information on page 806.

EASTBOURNE.—*The Eastbourne Hydropathic*, South Cliff. Cons. Phys., Henry Habgood, M.D. Access—Eastbourne.

EDINBURGH.—*Hydropathic.* James Bell, Man. Director. Access—Merchiston Station, 1 mile; Waverley Station, 3 miles.

FOLKESTONE.—*Bathing Establishment Co., Limited.* Access—Shorncliff, Folkestone Central, and Junction Stations.

FORRES.—*Cluny Hill Hydropathic.* Access—Forres Station, 1 mile; Inverness, 24 miles.

GRANGE-OVER-SANDS.—*Hazelwood Hydropathic.* Con. Phys., Dr. Luke. Access—Carnforth, London and North Western Railway, and thence by Furness Railway. Grange-over-Sands, ¼ mile.

Further information on page 807.

HARROGATE (Yorkshire).—*Harlow Manor Hydro.* Mr. Ballardie, Manager; Med. Sup., Dr. Dimmock.

The Cairn Hydropathic. Mr. Alderson, Manager. Access—Harrogate, ¾ mile.

The Harrogate Hydropathic Establishment. Phys., Geo. Tennant, M.B. Access—Harrogate, ½ mile.

HASTINGS (St. Leonard's).—*The Hastings Hydropathic and Spa.* Access—Hastings Station, 1 mile.

HEXHAM (Northumberland).—*Tynedale Hydropathic.* Prop., F. G. Grant; Med. Sups., Thos. Stainthorpe, M.D. and Dr. Stewart. Access—Hexham, 1 mile; Newcastle, 19 miles.

ILKLEY (Yorkshire).—*Craiglands Hydropathic.* Props., Dobson Bros. Res. Med. Sup., Henry Dobson, M.D., C.M.

Ilkley Wells House Hydropathic. Med. Sup., Thos. Scott, M.D. Access—Ilkley Station, ¼ mile.

The Spa Hydropathic. (Near Leeds and Bradford.) Med. Sup. Thos. Johnstone, M.D., M.R.C.P. Access—Ilkley, Yorks, Mid., Gt. Northern and Nth. Eastern Rys., and 3 minutes from Ilkley.

Troutbeck Hydropathic Establishment and Sanatorium. Props., Dobson Bros. Med. Sup., Thos. Scott, M.D.

KILMALCOLM (Renfrewshire).—*Hydropathic Establishment.* Manageress, Miss G. Thomson. Access—Greenock, 7 miles; Kilmalcolm, 16 miles from Glasgow, S. W. Railway.

Further information on page 809.

LLANDUDNO.—*Hydropathic and Winter Residence.* Med. Sup., James Craig, M.B. Access—Llandudno Station, 5 minutes.

MALVERN.—*The Malvern Hydropathic Establishment* (late *Dr. Rayner's*). Res. Prop., J. C. Fergusson, M.D., Access—Great Malvern Station, ½ mile. *Further information on page* 809.

Wyche-side Hydropathic. Res. Phys., Dr. Grindrod. Access—Malvern Wells G. W. Station, ½ mile.

MATLOCK.—*Darley Dale Hydropathic.* Prop., Wm. Atkin; Med. Sup., Dr. W. Moxon. Access—Matlock Bridge Station, 1¾ mile; Darley Dale, ½ mile.

Matlock House Hydropathic, Matlock Bank, Matlock Bridge. Med. Sup., W. Moxon, M.D., M.R.C.S. Access—Matlock Bridge (Mid. Railway), ¼ mile. Trams pass entrance every few minutes.

Further information on page 810.

Smedley's Hydropathic Establishment, Matlock Bridge. Phys., W. C. Sharpe, M.B., with a House Phys. Access—Matlock Bridge Station, ½ mile; Omnibus. *Further information on page* 805.

MELROSE.—*Waverley Hydropathic.* Con. Phys., Dr. Wade. Access—Melrose Station, 1 mile.

MOFFAT.—*The Moffat Hydropathic.* Prop., J. Farquharson.

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Further information on page 813.

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Hospital Nurses and Others Engaged in Attending on the Sick: A Manual for. By Edward J. Domville. 8th ed., pp. 120. Cr. 8vo., limp. *Churchill* 2/6

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Nursery: Text-Book of. By C. S. Weeks-Shaw. Edited by William J. Radford, M.R.C.S. With an Introduction by Sir Dyce Duckworth, M.D., L.L.D. Cr, 8vo., pp. 358. *E. Arnold* 3/6

Training Schools for Nurses: Text-Book for; including Physiology and Hygiene, &c. By P. M. Wise. Introduction by Dr. E. Cowles. Vol. 1. Cr. 8vo.,pp. 266. *Putnam's Sons* 5/-

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Annals of Surgery—Monthly 2/— Cassell & Co., Lim., Ludgate Hill, E.C.
Anthropological Journal—Quarterly 5/—Kegan Paul & Co. Charing Cross Road, W.C.
Asclepiad — Quarterly 2/6—Longmans & Co. Paternoster Row
Balneology, &c., Journal of—Quarterly—J. Bale & Sons, Great Titchfield Street, W.
Birmingham Medical Review — Monthly 6d—Hall & English, High Street, Birmingham
Boston Journal of Medicine—Weekly, 30/6 per annum—Kegan Paul & Co. Charing Cross Rd, W.C.
Botanical Magazine –Monthly 3/6 per annum—Reeve & Co. 5, Henrietta St., Covent Garden
Botany, Journal of—Monthly 1/3—West, Newman & Co. 54, Hatton Garden
Brain—Quarterly 3/6—Macmillan & Co. Lim., Bedford Street, W.C.
Braithwaite's Retrospect — Half Yearly 6/6—Simpkin & Co. Stationers' Hall Court
Bristol Medico-Chirurgical Journal —Quarterly 1/6—J. W. Arrowsmith, Bristol
British and Colonial Druggist —Weekly 3d—42 Bishopsgate Street without, E.C.
British Gynæcological Journal — Quarterly 2/6—John Bale and Sons, Gt. Tichfield Street, W.

British Homœopathic Society, Journal of — Monthly, 2/6—Bale & Sons, Gt. Titchfield Street

British Medical Journal—Weekly 6d—429, Strand, W.C.

Chemical Industry—Journal of Society of—Monthly—East Harding Street, E.C.

Chemical News—Weekly 4d—Boy Court, Ludgate Hill, E.C.

Chemical Review—Monthly 1/——5, Furnival Street, E.C.

Chemical Society, Journal of the—Monthly, 30/- per annum—Gurney & Jackson, 1, Paternoster Row, E.C.

Chemist and Druggist, the—Weekly 4d, 10/- per annum—42, Cannon Street

Chemists and Druggists, Register of —Annual 5/——17, Bloomsbury Square

Clinical Journal—Weekly 3d—30 and 31, Temple Chambers, E.C.

Dental Association, Journal of British—Monthly 6d—Baillière and Co., King William Street

Dental Record—Monthly 6d—3, Lexington St., Golden Square

Dental Science—British Journal of —1st and 15th 6d—J. P. Segg & Co. 291, Regent Street, W.

Dentist's Register—Annually 3/9—General Medical Council, 299, Oxford Street, W.

Dermatology—British Journal of—1/- Monthly—H. K. Lewis, 136, Gower Street, W.C.

Dublin Journal of Medical Science —Monthly 2/- —Fannin & Co.

Edinburgh Hospital Reports—Yearly—Y. J. Pentland, Teviot Place

Edinburgh Medical Jour.—Monthly 2/- — Y. J. Pentland, Edinburgh

Entomologist, Monthly Magazine—Monthly 6d — 1, Paternoster Row, E.C.

Entomologist — Monthly 6d — 32, Paternoster Row, E.C.

Geological Magazine—Monthly 1/6 —37, Soho Square, W.

Geological Society, Journal of—Irregular 5/- — 14, Henrietta Street

Geologist's Association's Proceedings—Quarterly 1/6—E. Stanford, 27, Cockspur Street

Glasgow Medical Journal—Monthly 2/——A. Macdougall, 7, Mitchell Lane, Glasgow

Guy's Hospital Gazette--Fortnightly 6d—42, Southwark Street.

Guy's Hospital Reports—Yearly 10/6 —J. & A. Churchill, 7, Great Marlborough Street

Health—Weekly 2d—18, Catherine Street

Homœopathic Review—Monthly 1/——E. Gould & Son, 59, Moorgate Street, E.C.

Homœopathic World—Monthly 6d —12, Warwick Lane

Hospital—Weekly 2d—28 and 29, Southampton St., W.C.

Ibis, the—Quarterly 6/- —Gurney & Jackson, 1, Paternoster Row

Index Medicus — Monthly — 50/- Annually—Kegan Paul & Co. Charing Cross Road, W.C.

International Journal of the Medical Sciences--Quarterly 6/—Cassell & Co. Lim., Ludgate Hill, E.C.

Irish Medical Directory—Annually 6/- —Baillière & Co. 20, King William Street, W.C.

Knowledge—Monthly 6d—326, High Holborn

Lancet—Weekly 7d—423, Strand, W.C.

Laryngology, Rhinology, & Otology, Journal of—Monthly 2/——11, Adam Street, W.C.

Linnæan Society, Proceedings of—Annually 3/- —Longmans & Co.

Linnæan Society, Transactions—Irregular. Price varies—Society's Apartments, Burlington House

Liverpool Medical Chirurgical Journal 3/6—Half-yearly — H. K. Lewis, Gower Street, W.C.

Medical Annual—Annually 7/6—J. Wright & Co. Bristol

Medical Chronicle—Monthly 1/6 — John Heywood, Manchester

Medical Directory—Annually 14/—J. & A. Churchill, 7, Great Marlborough Street

Medical Magazine—Monthly 2/6—Southwood, Smith & Co. 4, King Street, E.C.

Medical Pioneer—Monthly—33, Paternoster Row, E.C.

Medical Press & Circular—Weekly 5d—A. A. Tindall, 20, King William Street

Medical Record (New York)—Weekly, 30/- per annum—Kegan Paul & Co. Charing Cross Road, W.C.

Medical Register—Annually 6/—.299, Oxford Street, W.

Medical Student's Register—Annually 2/6—54, Gracechurch St.

Medical Temperance Journal–Quarterly 6d—33, Paternoster Row

Medical Times & Hospital Gazette—Weekly—11, Adam St., Adelphi

Mental Science, Journal of—Quarterly 5/—J. and A. Churchill, 7, Great Marlborough Street

Meteorological Record—Quarterly—E. Stanford, 27, Cockspur St.

Meteorological Society, Journal of—Quarterly 5/—E. Stanford, 27, Cockspur Street, S.W.

Microscopical Science, Quarterly Journal of—10/—J. and A. Churchill,7,Gt.Marlborough St.

Microscopy and Natural Science, International Journal of—Quarterly 2/6—Baillière & Co. King William Street

Mind—Quarterly 3/—Williams & Norgate, Henrietta Street, W.C.

Monthly Extract of British Journal of Dental Science—Subscribers only—322, 324, Regent St., W.

Naturalist—Monthly 6d—Henrietta Street, W.C.

Nature—Weekly 6d—Macmillan & Co. Lim., Bedford Street

Nervous and Mental Diseases—Quarterly, 18/- per annum—Kegan Paul & Co. Charing Cross Road, W.C.

New Sydenham Society—Irregular—Subscription 21/—H. K. Lewis, 136, Gower Street

New York Journal of Medicine—Weekly, 30/6 per annum—Kegan Paul & Co., Charing Cross Road, W.C.

New York Medical Journal—Weekly 33, Bedford Street, W.C.

Nursing Directory—Annually 5/—28 & 29, Southampton St., W.C.

Nursing Record—Weekly 4d—11, Adam Street

Odontological Society, Transactions of—Monthly during Sessions 2/6—Bale and Son, 87, Great Tichfield Street

Ophthalmic Hospital Reports—Yearly—J. & A. Churchill, 7, Great Marlborough Street

Ophthalmic Review—Monthly 1/—J. & A. Churchill, 7, Great Marlborough Street

Ophthalmological Society's Transactions—Yearly—J. and A. Churchill, 7, Great Marlborough Street

Ophthalmology, Archives of—Quarterly, 20/- per annum—G. P. Putnams Sons, 24, Bedford St.

Otology, Archives of—Quarterly, 12/- per annum—G. P. Putnams Sons, 24, Bedford St., W.C.

Pathology & Bacteriology, Journal of—Quarterly—Y. J. Pentland, West Smithfield, E.C.

Pediatrics—Fortnightly 8/- per annum—Harrison & Sons, 45, St. Martins Lane, E.C.

Pharmaceutical Journal—Weekly 4d—17, Bloomsbury Sq., W.C.

Pharmaceutical Society, Calendar of—Annually 1/—17, Bloomsbury Square

Pharmacy, Monthly Magazine of—Monthly 6d—Burgoyne, Burbidges & Co. 16, Coleman St.

Physiology, Journal of—21/- per volume—Ave Maria Lane

Practitioner—Monthly 1/—Cassell & Co. Ludgate Hill, E.C.

Psychical Research, Proceedings of Society for—Occasionally—Kegan Paul & Co. Charing Cross Road, W.C.

Public Health—Monthly 1/—E. W. Allen, Ave Maria Lane, E.C.

Quarterly Therapeutic Review—1/—Baiss Bros. & Co. 4, Jewry Street

Quekett Microscopic Club, Journal of—Half-yearly 2/6—Williams and Norgate, 14, Henrietta Street

Registrar General's Return of Births, Deaths & Marriages—Weekly, Quarterly & Annually — Eyre & Spottiswoode, 9, East Harding Street, E.C.

Royal College of Surgeons' Calendar —Annually 1/- — Taylor and Francis, Red Lion Court, Fleet Street, E.C.

Royal Microscopical Society, Journal of—Bi-Monthly, 30/- per annum—Williams & Norgate, Henrietta Street, Covent Garden

Sanitarian — Monthly, 18/- per annum — Kegan Paul & Co. Charing Cross Road, W.C.

Sanitary Journal—Monthly 1/—26, Bothwell Street, Glasgow

Sanitary Record—Monthly 3d; 10/- per annum — 5, Fetter Lane, E.C.

Scalpel, The — Monthly, 7/6 per annum—Simpkin & Co., Paternoster Row

Science Gossip — Monthly 4d — Simpkin & Co., Paternoster Row

Science—Weekly, per annum 22/— Kegan Paul & Co., Charing Cross Road, W.C.

Science Progress—Quarterly, 10/6 per annum—28 & 29, Southampton Street, W.C.

Scientific American — Weekly, per annum 18/—Kegan Paul & Co. Charing Cross Road, W.C.

Scientific American Supplement—25/- per annum—Kegan Paul & Co. Charing Cross Road, W.C.

Scottish Medical & Surgical Journ. —Monthly—W. F. Clay, Teviot Place, Edinburgh

Sheffield Medical Journal—Quarterly 2/-—263 Glossop Road, Sheffield

State Medicine, Journal of—Monthly 2/-—Baillière & Co., King William Street, W.C.

St. Bartholomew's Hospital Reports —Yearly—15, Waterloo Place

St. Mary's Hospital Gazette — Monthly—Morton & Bart, 187, Edgware Road, W.

St. Thomas's Hospital Reports—Yearly—J. & A. Churchill, 7 Great Marlborough Street

Veterinarian — Monthly 1/6—22½, Bartholomew Close, E.C.

Veterinary Journal—Monthly 1/6—Baillière & Co. King William St.

West London Medical Journal—Quarterly—J. Bale & Sons, Great Titchfield Street, W.

Westminster Hospital Reports—Yearly—7, Great Marlborough Street

Year Book of Pharmacy—Annually 10/—J. & A. Churchill, 7, Great Marlborough Street

Year Book of Treatment—Annually 7/6—Cassell & Co.

Zoological Record—Annually 30/—Gurney & Jackson, Paternoster Row

Zoological Society of London, Proceedings—Quarterly 3/- plain; 12/- coloured—Longmans & Co. Paternoster Row

Zoologist—Monthly 1/- — Simpkin and Co. Paternoster Row

The Medical Annual Note Book.

It is easier to make a note of a thing, than to remember *where* the note was made. The following pages are indexed under their respective headings, and any note can be immediately found when required.

NOTES.

Copy here any formula or fact you wish to keep for reference. (These pages are indexed under the word "Notes.")

MÖLLER'S New Hydroxyl-free Cod-Liver Oil

is absolutely pure, and causes NO "REPEATING" or ERUCTATIONS, as, by our new patented process, all decomposition of the fats is prevented.

TO BE OBTAINED FROM ALL CHEMISTS.

NOTES.

COLES' SPIRAL SPRING TRUSS:

Inventors and Patentees,

WILLIAM COLES & CO., 225, Piccadilly, LONDON, W.

NOTES.

COLES' SPIRAL SPRING TRUSS:

Inventors and Patentees,

WILLIAM COLES & CO., 226, Piccadilly, London, W.

ADDRESSES (PRIVATE).

MÖLLER'S New Hydroxyl-free Cod-Liver Oil

is absolutely pure, and causes NO "REPEATING" or ERUCTATIONS, as, by our new patented process, all decomposition of the fats is prevented.

TO BE OBTAINED FROM ALL CHEMISTS.

NURSES.

Note whether Midwifery or Sick Nurse, their terms and private address.

RICH IN FLESH AND BONE FORMERS.
SCOTT'S MIDLOTHIAN OATFLOUR.
FOR INFANTS AND INVALIDS.

BOOKS OR INSTRUMENTS LENT.

COLES' SPIRAL SPRING TRUSS:

Inventors and Patentees,

WILLIAM COLES & CO., 225, Piccadilly, London, W.

INSTRUMENTS, APPLIANCES OR MATERIALS WANTED.

COLES' SPIRAL SPRING TRUSS:

Inventors and Patentees,

WILLIAM COLES & CO., 225, Piccadilly, London, W.

DRUGS WANTED.

MÖLLER'S New Hydroxyl-free Cod-Liver Oil

is absolutely pure, and causes NO "REPEATING" or ERUCTATIONS, as, by our new patented process, all decomposition of the fats is prevented.

TO BE OBTAINED FROM ALL CHEMISTS.

DRUGS WANTED.

J. WRIGHT & CO., BRISTOL, **Medical Publishers, and Printers,**

Are prepared to negociate for the **Printing** and **Publication** of **Medical** and **Scientific Works** of every description, and their facilities for this class of work are of a very high description.

DRUGS WANTED.

A Perfect Antidote for Anæmia.
SCOTT'S MIDLOTHIAN OATFLOUR.
Entirely Free from Husk.

FREE FROM ADDED ALKALI,

OR ANY FOREIGN ADMIXTURE.

"*The standard of highest purity attainable.*"—LANCET.

CADBURY'S COCOA

Absolutely Pure, therefore Best.

CADBURY'S is a perfectly safe and reliable Cocoa, containing the full nourishing properties of the Cocoa bean, without any foreign admixture whatsoever. As a sustaining, strength-giving beverage, and a nourishing food, CADBURY'S Cocoa fulfils every requirement.

Health says: "CADBURY'S Cocoa has in a remarkable degree those natural elements of sustenance that give the system endurance and hardihood, with a steady action that makes it a most acceptable and reliable beverage."

73rd YEAR.

YORKSHIRE INSURANCE CO.

(ESTABLISHED AT YORK, 1824.)

FIRE. — LIFE. — ANNUITIES.

Capital (Authorised) £1,000,000 | **Accumulated Fund - £1,025,576**
,, (Subscribed) £500,000 | **Annual Income - - £208,237**

Trustees—The Right Hon. Lord DERWENT. The Right Hon. Lord WENLOCK.

Head Office - - YORK.
London Office: 82, OLD BROAD STREET, E.C.

SPECIMEN RATES.—Annual Premium to insure the Sum of £100.

Age next Birthday	Premium Payable for the whole of Life.		Limited Payments				Age next Birthday.
			Table V. With Profits.		Table VI. Without Profits.		
	Table I. With Profits.	Table II. Without Profits.	20 Payments only.	25 Payments only.	20 Payments only.	25 Payments only.	
25	£2 3 10	£1 16 1	£3 3 3	£2 15 11	£2 12 1	£2 6 0	25
30	2 9 1	2 0 9	3 8 8	3 0 10	2 16 10	2 10 5	30

Endowment Insurances payable at a specified age or at previous death.

Age next Birthday.	Table III. With Profits.		Table IV. Without Profits.		*New Table with Deferred Profits.		Age next Birthday.
	Payable at 55.	Payable at 60.	Payable at 55.	Payable at 60.	Payable at 55.	Payable at 60.	
25	£3 5 6	£2 16 8	£2 15 0	£2 7 5	£2 18 11	£2 10 8	25
30	4 0 2	3 7 3	3 8 0	2 16 8	3 12 9	3 0 6	30

* In case of death before the Endowment Age, the sum insured only will be payable.

SPECIAL Attention is called to the Liberal Options which are now obtainable under any of the **Endowment Tables** of the Company, on the attainment of the Endowment Age. These are:—

1.—Payment of the full Sum Insured in Cash, with Bonuses.

2.—The Insurance to be continued without further payment of premium for the original amount of the Policy. The Bonuses, and the balance of the sum insured after providing for this Paid-up Policy, will be paid in cash.

3.—A Paid-up Policy FOR AN INCREASED AMOUNT, payable at death.
In cases 2 and 3 proof of good health will be required.

4.—A Pension to be drawn for the remainder of life, and in addition, a Paid-up Policy, without further payment of premium, for the original sum insured.

5.—A Pension for the remainder of life.

6.—A Pension to wife or child.

7.—A Deferred Pension to commence at the death of the life insured and be payable during the life of the widow, or of a child.

FIRE INSURANCES effected by the Company on the most moderate terms, according to the nature of the risks.

INDEX TO LIFE ASSURANCE OFFICES.

A, *when Established*; B, C, D, *Annual Premiums to Insure £100 on death with Profits, at the age of* 30, 40, *and* 50; E, *Assurance and Annuity Funds, exclusive of Paid-up Capital.* **M**, *Mutual Offices*; **P**, *Proprietary Offices.*

Those marked with an asterisk (*) in the E column have not sent revised figures for 1895.

Title, &c., of Office.	A	B	C	D	E
					£
Abstainers and General, Life and Accident, Carrs Lane, Birmingham. *Sec.*, R. A. Craig, A.I.A. P	1883	40/11	55/10	82/3	90,000
Alliance, Fire and Life, Bartholomew Lane, E.C. *Sec.*, Robert Lewis .. .. .. P	1824	48/9	64/5	90/9	2,556,816
Atlas, Fire & Life, 92, Cheapside, E.C. *Act.*, Robert Cross. *Sub. Man.*, A.W. Yeo. *Gen. Man.*, Saml. J. Pipkin. *Further particulars see page* 730 P	1808	49/3	63/7	88/8	1,480,573
British Empire, Mutual Life, 4 & 5, King William Street, E.C. *Gen. Man.*, G. H. Ryan .. M	1847	47/2	63/9	92/3	2,400,000
British Equitable, Life, Queen Street Place, E.C. *Man.*, J. W. Fairey .. .. .. P	1854	49/-	66/-	91/3	1,439,104
British Workman's and General, Life and Endowments, Broad Street Corner, Birmingham. *Man.*, H. Port. *Sec.*, S. J. Port. *Sec. Ordy. Dept.*, J. G. Sessions. *Further particulars see page* 729 P	1866	48/-	64/6	92/3	224,429
Caledonian, Fire and Life, 19, George Street, Edinburgh. *Man.*, D. Deuchar. London Office, 82, King William Street, E.C. .. .. P	1805	48/9	64/6	88/6	1,337,493
City of Glasgow, Life, 30, Renfield Street, Glasgow. *Man.*, F. F. Elderton. London Office, 12, King William Street, E.C. *Sec.*, Arthur J. Hemming, F.I.A. .. .. .. P	1838	48/5	64/6	89/10	2,127,568
Clergy Mutual, Life, 2 & 3, Sanctuary, Westminster. *Act.*, F. B. Wyatt. *Sec.*, G. H. Hodgson M	1829	46/4	62/2	87/4	4,044,071
Clerical, Medical and General, Life, 15, St. James' Square, and Mansion House Buildings. *Act.*, W. J. H. Whittall .. .. .. P	1824	48/9	65/-	90/9	3,397,169
Colonial Mutual, Life and Annuity, 33, Poultry. *Man.*, Edward W. Browne .. .. M	1873	44/8	60/9	86/2	1,923,835
Commercial Union, Fire, Life and Marine, 24, 25, and 26, Cornhill, E.C. *Act.*, T. E. Young, B.A. P	1861	49/5	64/2	87/8	1,763,292
Co-operative, Fire, Life and Fidelity, Long Millgate, Manchester. *Man.*, James Odgers .. P	1867	45/8	61/5	88/4	12,590
Eagle, Life, 79, Pall Mall, S.W. *Gen. Man.* and *Sec.*, Geo. R. Jellicoe .. .. .. P	1807	50/8	65/5	91/4	2,300,046
Economic, Life, 6, New Bridge Street, Blackfriars. *Act.* and *Sec.*, G. Todd, M.A., F.I.A. M	1823	44/3	59/9	87/6	3,620,258
Edinburgh, Life and Annuities, 22, George Street, Edinburgh. *Man.*, G. M. Low, F.F.A. *Sec.*, A. Hewat, F.F.A., F.I.A. London Office, 11, King William Street, E.C. *Sec.*, Frank Griffith. P	1823	47/7	63/2	89/-	2,841,047
English and Scottish Law, Life, Annuity, Endowment, and Loan, 12, Waterloo Place, S.W. *Gen. Man.*, Arthur Jackson .. .. P	1839	49/6	65/2	90/11	2,035,961
Equitable Life Assurance Society, Mansion House Street, E.C. *Act.*, H. W. Manly. *Further particulars see page* 734 .. .. .. M	1762	53/5	67/11	90/8	4,285,285
Equity and Law, Life, 18, Lincoln's Inn Fields, W.C. *Act.*, A. F. Burridge, F.I.A. .. .. P	1844	48/10	64/6	90/9	2,870,963
Friends' Provident, Life, Annuities, &c., Bradford, Yorkshire. *Act.* and *Sec.*, John Bell Tennant. M	1832	45/9	58/1	79/3	2,500,000
General Life, 103, Cannon Street, E.C. *Man.* and *Sec.*, John Robert Freeman. *Further particulars see page* 732 .. .. .. P	1837	49/10	65/4	92/8	1,423,583

A, *when Established*; B, C, D, *Annual Premiums to Insure £100 on death, with Profits, at the age of* 30, 40 *and* 50; E, *Assurance and Annuity Funds, exclusive of Paid-up Capital.* M, *Mutual Offices*; P, *Proprietary Offices.*

Title, &c., of Office.	A	B	C	D	E
					£
Gresham, Life, St. Mildred's House, E.C. *Man.* and *Sec.*, James H. Scott .. .. P	1848	49/-	65/8	94/3	5,752,263
Guardian, Fire and Life, 11, Lombard St., E.C., and 21, Fleet Street. *Sec.*, T. G. C. Browne.. P	1821	48/10	64/6	89/3	2,688,000
Hand-in-Hand, Fire, Life and Annuities, 26, New Bridge Street, Blackfriars, E.C. *Man.*, B. Blenkinsop .. .. M	1696	51/6	67/9	94/1	2,718,087
Imperial, Life, 1, Old Broad Street, and 22, Pall Mall. *Act.* and *Gen. Man.*, J. Chisholm, F.I.A. *Sub. Man.* and *Joint Act.*, Fredk. Bell, F.I.A. P	1820	46/11	62/1	87/5	2,197,050
Lancashire, Life and Fire, Exchange Street, Manchester. *Gen. Man.* Digby Johnson, London Office, 14, King William St., E.C. *Sec.*, John P. Read P	1852	48/6	63/6	90/6	976,786
Law Life, 187, Fleet Street. *Man.*, E. H. Holt. *Act.*, A. B. Adlard .. .. .. P	1823	49/4	64/10	91/-	3,743,969
Law Union and Crown, Life, Fire and Annuities, 126 Chancery Lane. *Gen. Man.*, A. Mackay .. P	1825	48/4	64/-	89/10	3,264,284
Legal and General Life, 10, Fleet Street, E.C. *Act.* and *Man.*, E. Colquhoun, F.I.A. .. P	1836	50/9	65/11	90/9	3,000,000
Life Association of Scotland, 82, Prince's Street, Edinburgh. *Man.*, John Turnbull Smith. *Sec.*, J. Sharp. London Office, 5, Lombard Street. *Sec.*, J. C. Wardrop .. .. .. P	1838	50/-	65/4	93/4	4,508,832
Liverpool and London and Globe, Fire, Life and Annuities, 1 Dale Street, Liverpool. *Sec.*, John M. Dove. London Office, 7, Cornhill, E.C. *Sec.*, A. Hendriks, F.I.A. .. .. .. P	1836	49/3	65/6	91/3	4,860,056
London and Lancashire, Life, 66 & 67, Cornhill, E.C. *Man.* & *Act.*, W. P. Clirehugh. *Asst. Sec.*, G. W. Mannering .. .. P	1862	46/10	£2/4	86/10	1. 28,651
London Assurance Corporation, Fire, Life and Marine, 7, Royal Exchange. *Man.* of Life Dept., James Clunes. *Act.*, Geo. King .. P	1720	49/6	64/11	91/5	2,030,403
London, Edinburgh and Glasgow, Life, Industrial, and Accidents, Farringdon Street, E.C. *Sec.*, T. V. Cowling. *Gen. Man.*, Thos. Neill P	1881	48/11	64/7	92/-	107,376
London Life Association, Lim., 81, King William St., E.C. *Act.* and *Sec.*, C. D. Higham, F.I.A. M	1806	60/4	78/10	108/4	4,325,000
Marine and General Mutual, Life and Marine, 14, Leadenhall St., E.C. *Act.* and *Sec.*, S. Day, F.I.A. M	1852	48/10	65/11	91/11	728,665
Metropolitan Life, 13, Moorgate St., E.C. *Act.* and *Sec.*, L. M. Simon. *Further particulars see page* 732 .. .. M	1835	49/9	66/4	92/-	2,009,570
National Assurance of Ireland, Fire, Life, and Annuities, 3, College Green, Dublin. London Office, 33, Nicholas Lane, E.C. .. P	1822	48/7	64/3	91/7	*271,573
National Guardian, Life and Loans, 21, New Oxford Street, W.C. *Sec.*, Thomas J. Bourne .. P	1865	48/6	64/8	86/8	*9,435
National Mutual Life, 39, King Street, Cheapside, *Act.* and *Man.*, Geoffrey Marks, F.I.A. *Joint Secs.*, H. G. Rowsell and H. J. Lockwood. *Asst. Act.*, R. Todhunter, M.A., F.I.A. .. M	1830	48/4	63/7	89/6	2,449,856
National Provident, 48, Gracechurch Street, E.C. *Act.* and *Sec.*, Arthur Smither .. .. M	1835	50/2	66/3	91/1	4,782,503
New York Life, Trafalgar Buildings, Trafalgar Square, London, W.C. *Gen. Man.*, Alex. J. Hawes. *Sec.*, Wm. R. Collinson ..	1845	46/7	64/5	97/-	35,965,432
North British & Mercantile, Fire, Life & Annuities, 61, Threadneedle Street, E.C., and 64, Princes Street, Edinburgh. *Life Man.* and *Act.*, London, H. Cockburn, *Sec.*, F. W. Lance. *Further particulars see page* 731 .. .. .. P	1809	49/10	66/1	91/11	9,144,615
Northern Assurance, 1, Moorgate St., E.C. *Gen. Man.*, H. E. Wilson .. .. .. P	1836	48/8	£4/10	92/4	2,983,008

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Title, &c., of Office.	A	B	C	D	E
					£
Norwich Union, Life, Norwich. *Sec.*, J. J. W. Deuchar. London Office, 50, Fleet Street, E.C. P	1808	45/8	59/6	85/3	2,327,929
Patriotic Life and Fire, 9, College Green, Dublin. *Man.*, B. H. O'Reilly. *Act.*, Samuel Hunter. London Office, 19, King William St., E.C. *Man.*, Chas. E. Strong .. .. .. P	1824	48/8	64/5	90/4	151,213
Pearl, Life, London Bridge, City, E.C. *Man.*, P. J. Foley .. .. P	1864	49/-	65/-	92/-	502,539
Pelican, Life, 70, Lombard Street, 57, Charing Cross, and 10, Pall Mall. *Gen Man.*, James Sorley, F.I.A., F.R.S.E. .. .. .. P	1797	48/11	64/9	91/7	1,255,044
Provident, Life, 50, Regent Street. *Sec.*, C. Stevens P	1806	50/2	66/4	92/10	2,950,174
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1895 - -	368,941 ...	135,246 ...	594,091

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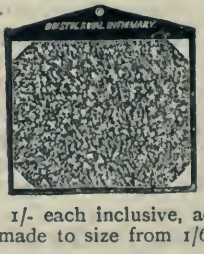

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THE Clinical practice of this Hospital comprises a service of 744 Beds, of which 233 are allotted to the Medical cases, 336 to the Surgical Cases, 25 to Diseases of the Eye, 31 to Diseases of Women, 46 to Isolation and General, while 70 are for Convalescent Patients at Swanley, Kent. The Hospital receives within its Wards nearly 7000 Patients annually, whilst the Out-Patients amount to more than 160,000.

PUPILS' APPOINTMENTS.

Ten House-Physicians, each holding office for one year, are appointed by the Physicians. Each House-Physician is provided with rooms by the Hospital authorities. Ten House-Surgeons, each holding office for one year, are appointed by the Surgeons. Each House-Surgeon is provided with rooms by the Hospital authorities.

The Midwifery-Assistant holds office for six months, and is appointed by the Physician-Accoucheur. He is provided with rooms by the Hospital Authorities.

The Ophthalmic House-Surgeon is appointed every six months by the Ophthalmic Surgeons. All the above officers receive a salary of £80.

An Extern Midwifery Assistant is appointed every three months.

Two Resident Assistant Chloroformists are appointed annually; the Senior receiving £120 and the Junior £100. Two Assistant Electricians, with a salary of £25, are appointed every three months.

The In-Patient Dressers, the Clinical Clerks, the Obstetric Clerks, the Clerks to the Out-Patients, the Dressers to the Out-Patients, and the Clerks and Dressers in the Special Departments are chosen from the diligent Students. No fee is paid for any of these appointments.

MEDICAL AND SURGICAL STAFF.

Physicians—Dr. Church, Dr. Gee, Sir Dyce Duckworth, Dr. Hensley, Dr. Brunton, F.R.S.
Assistant-Physicians—Dr. Norman Moore, Dr. S. West, Dr. Ormerod, Dr. Herringham, Dr. Tooth.
Consulting Surgeons—Sir J. Paget, Bart., D.C.L., F.R.S., Luther Holden, Esq., F.R.S.
Surgeons—Mr. T. Smith, Mr. Willett, Mr. Langton, Mr. Marsh, Mr. Butlin.
Assistant Surgeons—Mr. Walsham, Mr. Cripps, Mr. Bruce Clarke, Mr. Bowlby, Mr. Lockwood.
Physician-Accoucheur—Dr. Champneys.
Assistant Physician-Accoucheur—Dr. Griffith.
Ophthalmic Surgeons—Mr. Vernon, Mr. Jessop.

THE COLLEGE.

Students attending the Practice of the Hospital, or the Lectures in the Medical School, are admitted to residence in the College within the Hospital walls, subject to the College Regulations.

LECTURES.

Medicine—Sir Dyce Duckworth, Dr. Moore.
Surgery—Mr. Marsh, Mr. Butlin.
Descriptive and Surgical Anatomy—Mr. Walsham, Mr. Bruce Clarke.
General Anatomy and Physiology, with Histology—Dr. Klein, F.R.S.
Chemistry and Practical Chemistry—Dr. Russell, F.R.S.
Midwifery—Dr. Champneys.
Physics—Mr. F. Womack.
Materia Medica—Dr. Brunton, F.R.S.
Botany—Rev. George Henslow.
Forensic Medicine—Dr. Hensley.
Hygiene—Dr. Thorne, C.B.
Biology and Comparative Anatomy—Dr. Shore.
Pathological Anatomy—Dr. Kanthack.
Ophthalmic Surgery—Mr. Vernon.
Psychological Medicine—Dr. Claye Shaw.

CLINICAL LECTURES

Are given during the Winter and Summer Sessions.
Clinical Medicine—Dr. Church, Dr. Gee, Sir Dyce Duckworth, Dr. Hensley, Dr. Brunton.
Clinical Surgery—Mr. T. Smith, Mr. Willett, Mr. Langton, Mr. Marsh, Mr. Butlin.
Midwifery and Diseases of Women—Dr. Champneys.

SPECIAL DEPARTMENTS.

Diseases of the Skin—Dr. S. West
Orthopædic Surgery—Mr. Walsham.
Diseases of the Ear—Mr. Cumberbatch.
Diseases of the Eye—Mr. Vernon, Mr. Jessop.
Practical Surgery—Mr. Bowlby, Mr. Lockwood.
Practical Anatomy—Mr. Waring, Mr. Bailey.
Assistant Demonstrators — Mr. Weir, Mr. Sloane, Mr. Furnivall, Mr. Miles.
Practical Physiology—Dr. Edkins.
Assistant Demonstrators—Dr. Horton-Smith, Dr. Drysdale.
Operative Surgery—Mr. Berry, Mr. Waring, Mr. Eccles.
Practical Medicine—Dr. West, Dr. Andrewes, Dr. Fletcher.
Practical Midwifery—Dr. Roberts.
Medical Registrars—Drs. Calvert and Garrod. *Surgical Registrar*—Mr. Berry.

SCHOLARSHIPS AND PRIZES.—Open Scholarships in Science (founded 1873). These Scholarships, four in number, of the value of £150, £75, £75, £50, are tenable for one year. Candidates must not be more than twenty-five years of age for those of £75, and not more than twenty years of age for the others, and must not have entered to the medical or surgical practice of any London medical school. The subjects of examination are Physics, Chemistry, for one of £75; Biology and Physiology for the other of £75; and for the Junior, Physics, Chemistry, and Biology.—Preliminary Scientific Exhibition (founded 1873). The subjects of examination are identical with those of the Open Scholarship in Science. This Exhibition, of the value of £50, is tenable for one year.—The Jeaffreson Exhibition, of the value of £20, is an open exhibition in Classics, Mathematics, and Modern Languages.—A Shuter Scholarship, £50, in Anatomy, Physiology, and Materia Medica, at entrance (limited to graduates in arts of Cambridge.)—A Senior Scholarship, £50, in Anatomy, Physiology, and Chemistry.—Lawrence Scholarship and Gold Medal, of the value of 40 guineas (founded 1873 by the family of the late Sir William Lawrence).—Two Brackenbury Scholarships, each £30, in Medicine and Surgery.—Four Junior Scholarships in the subjects of study of the first year; 1, £30; 2, £20; 3, £25; 4, £15.—The Wix Prize is awarded for the best essay on the following subject: "The Life and Works of Dr. P. M. Latham."—The Bentley Prize for the best report of cases occurring in the wards of the hospital during the previous year.—The Kirkes Gold Medal and Scholarship of 30 guineas for Clinical Medicine.—The Hichens Prize for the best examination in "Butler's Analogy."—Foster Prize for the best examination in Practical Anatomy (senior).—The Treasurer's Prize for the best examination in Practical Anatomy (junior).—The Harvey Prize for the best examination in Practical Physiology.

Special Classes are held for the Preliminary Scientific, and for other Examinations at the University of London. Students preparing for other Examining Boards are arranged in classes and examined by the Lecturers, Demonstrators, and Assistant Demonstrators.

Fee for Lectures and Hospital Practice, 150 guineas if paid in one sum, or 160 guineas if paid by Instalments. Payment in either of these ways entitles a Student to a Perpetual ticket.

Communications to be addressed Dr. T. W. Shore, Warden of the College, St. Bartholomew's Hosp.

ST. THOMAS'S HOSPITAL,

ALBERT EMBANKMENT, WESTMINSTER BRIDGE, S.E.

CONSULTING STAFF.

Physician—Dr. Harley.
Obstetric Physician—Dr. H. Gervis.
Surgeons—Sir John Simon, K.C.B., Mr. Sidney Jones, Mr. Croft, Sir William Mac Cormac.
Ophthalmic Surgeons—Mr. Liebrich, Mr. Nettleship.

VISITING STAFF.

Physicians—Dr. Ord, Dr. J. F. Payne, Dr. Seymour J. Sharkey, Dr. T. D. Acland.
Assistant Physicians—Dr. H. P. Hawkins, Dr. H. W. G. Mackenzie, Dr. H. G. Turney.
Surgeons—Mr. A. O. MacKellar, Mr. H. H. Clutton, Mr. W. Anderson, Mr. B. Pitts.
Assistant Surgeons—Mr. G. H. Makins Mr. W. H. Battle, Mr C. A Ballance, Mr. H. B. Robinson.

SPECIAL DEPARTMENTS.

Obstetric Department; Physician—Dr. C. J. Cullingworth.
Assistant Physician—Dr. W. W. H. Tate.
Eye Department: Surgeon—Mr. J. B. Lawford.
Assistant Surgeon—Mr. J. H. Fisher.
Throat Department: Physician—Dr. F. Semon.
Skin Department: Surgeon—Mr. Wm. Anderson.
Ear Department: Surgeon—Mr. C. A. Ballance.
Electrical Department: Physician—Dr. H. G. Turney.
Vaccination Department: Dr. R. Cory.
Dental Department: Surgeon—Mr. C. E. Truman.

MEDICAL OFFICERS.

Resident Assistant Physician—Dr. S. G. Toller.
Resident Assistant Surgeon—Mr. F. C. Abbott.
Anæsthetists—Mr. Tyrrell, Mr. White, Mr. Morris, Mr. Low.
Pharmaceutist—Mr. Edmund White.
Medical Registrar—Dr. C. R. Box.
Surgical Registrar—Mr. C. S. Wallace.
Obstetric Registrar—Dr. W. W. H. Tate.

LECTURERS.

Medicine—Dr. Payne, Dr. Sharkey.
Clinical Medicine—Dr. Ord, Dr. Payne, Dr. Sharkey, Dr. Acland.
Surgery—Mr. Clutton, Mr. Pitts.
Clinical Surgery—Sir William Mac Cormac, Mr. MacKellar, Mr. Clutton, Mr. Anderson, Mr. Pitts.
Practical Surgery—Mr. MacKellar, Mr. Ballance.
Descriptive Anatomy—Mr. Anderson, Mr. Makins.
General Anatomy and Physiology—Dr. Brodie.
Practical Physiology and Histology—Dr. Brodie.
Elementary Biology—Mr. Parsons.
Diseases of the Eye—Mr. Lawford.
Diseases of the Throat—Dr. Semon.
Chemistry, Chemical Physics, and Practical Chemistry—Mr. Wyndham R. Dunstan.
Midwifery and Diseases of Women and Infants—Dr. Cullingworth.
Pharmacology & Therapeutics—Dr. Mackenzie.
Forensic Medicine and Toxicology—Dr. Cory, Mr. MacKellar.
Pathological Anatomy—Dr. Hawkins.
Surgical Pathology and Bacteriology — Mr. Shattock.
Botany—Mr. Bennett.
Comparative Anatomy & Zoology—Mr. Parsons.
Mental Diseases—Dr. Rayner.
Public Health—Dr. Edward Seaton.
Elementary Clinical Medicine—Dr. Mackenzie, Dr. Turney.

SCHOLARSHIPS, PRIZES, AND APPOINTMENTS.

Two Open Entrance Science Scholarships, of £150, and £60, are awarded in October to First Year's Students after an Examination in Chemistry, Physics, and Botany, Zoology, or Physiology.

One Open Entrance Scholarship in Anatomy, Physiology, and Chemistry, of the value of £50, for Third Year's Students.

FIRST YEAR'S PRIZES.—Winter: The William Tite Scholarship, £27 10s.; College Prizes, £20 and £10. Summer: College Prizes, £15 and £10.

SECOND YEAR'S PRIZES.—Winter: The Peacock Scholarship, £38 10s., tenable for two years; College Prizes, £20 and £10. Summer: College Prizes, £15 and £10.

THIRD YEAR'S PRIZES.—Winter: The Musgrove Scholarship, £88 10s.; College Prizes, £20, £15, and £10. Summer: College Prizes, £15 and £10.

The Cheselden Medal, annually, for Surgery and Surgical Anatomy.
The Mead Medal, annually, for Medicine, Pathology, and Hygiene.
The Grainger Testimonial Prize, annually, for an Anatomical and Physiological Essay.
The Solly Medal and Prize, biennially, for Surgical Reports.
The Beaney Scholarship, biennially, for Surgery and Surgical Pathology.
The Bristowe Medal, annually, for Pathology.
The Treasurer's Gold Medal, annually, for General Proficiency and Good Conduct.
The Salters' Company Research Fellowship of the annual value of £100, tenable for three years
Four House Physicians, four House Surgeons, four Assistant House Surgeons, a Senior and Junior Obstetric House Physician, are selected every three months from Students holding qualifications; two Ophthalmic House Surgeons, one with a salary of £50, and the other provided with Commons, are also appointed. Clinical Assistants in the Special Departments for Diseases of the Skin, Throat and Ear.

Clinical Clerks and Dressers to Out and In-Patients. (All these appointments are free.)

Two Registrars, at a Salary of £100 each, are chosen from Senior Students.

An Obstetric Tutor and Registrar at a Salary of £50.

A Resident Assistant Physician and a Resident Assistant Surgeon at a Salary of £100 per annum each, are appointed from time to time.

Assistants to the Teachers of Practical Surgery, to the Demonstrators of Morbid Anatomy, and in the Physiological Laboratory, Prosectors, and Obstetric Clerks are also appointed.

The Winter Session commences on October 1st, and the Summer on May 1st. Students may enter at either Session.

The Fees may be paid in one sum or by instalments. Special Entries may be made to Lectures and Practice. Students can enter in the second or subsequent years at a reduced fee. Dental Students are admitted. Qualified Practitioners can obtain perpetual tickets on payment of a small fee.

Special Classes are held for the Preliminary Scientific and Intermediate M.B. Examinations of the University of London.

H. P. HAWKINS, *Dean.*

Any further information may be obtained from Mr. RENDLE, *Medical Secretary.*

UNIVERSITY COLLEGE, LONDON.

FACULTY OF MEDICINE—SESSION 1896-7.

Classes in the order in which Lectures are delivered during the day:—

WINTER SESSION.

Medicine—Prof. F. T. Roberts, M.D., B.Sc.
Surgery—Prof. A. E. Barker, F.R.C.S.
Anatomy and Physiology (including Practical Physiology and Histology)—Prof. E. A. Schäfer, F.R.S.
Chemistry—Prof. W. Ramsay, Ph.D., F.R.S.
Anatomy—Prof. Thane.
Practical Anatomy—The pupils are directed in their studies during several hours daily by Prof. Thane, Messrs. P. Fleming, M.D., B.S., White, M.B., B.S., Castellote, M.B., Martin Leake, Waters, M.R.C.S., L.R.C.P. (Demonstrators).
Comparative Anatomy and Zoology—Prof. Weldon, M.A., F.R.S.
Practical Surgery—Mr. Bilton Pollard, and Mr. R. Johnson.
Dental Surgery—Mr. S. Spokes.
Morbid Anatomy—Prof. Sidney Martin, M.D., F.R.S.

SUMMER SESSION.

Botany—Prof. F. W. Oliver, M.A., D.Sc.
Midwifery—Prof. H. R. Spencer, M.D.
Pathology—Prof. Sidney Martin, M.D., F.R.S.
Medical Jurisprudence—Prof. G. V. Poore, M.D.
Materia Medica and Therapeutics—Prof. J. Rose Bradford, M.D., D.Sc., F.R.S.
Practical Chemistry—Prof. W. Ramsay, Ph.D., F.R.S.
Elementary Biology, with Laboratory Work—Prof. Weldon, F.R.S.
Practical Instruction in Operative Surgery—Mr. Bilton Pollard, B.S., F.R.C.S.
Ophthalmic Medicine and Surgery—Professor John Tweedy, F.R.C.S., and Mr. Marcus Gunn, F.R.C.S.
Analytical Chemistry—Prof. W. Ramsay, F.R.S.
Hygiene—Prof. Corfield, M.D.
Mental Diseases—Dr. W. J. Mickle, F.R.C.P.

CLINICAL INSTRUCTION.—Hospital Practice daily throughout the Year.

The Hospital has special Obstetric, Ophthalmic, Skin, Throat, Aural, and Dental Departments. Nearly 3000 In-patients and about 40,000 Out patients are treated annually. Thirty-six appointments, twenty-two being resident as House-Surgeon, House-Physician, Obstetric Assistant, &c., are filled up by competition during the year, and these, as well as all Clerkships and Dresserships, are open to Students of the Hospital without extra fee.

Consulting Physicians—Sir W. Jenner, Bart. G.C.B., M.D., F.R.S., C. J. Hare, M.D., W. R. Gowers, M.D., F.R.S., Sir John Williams, Bart., M.D. (Obstetric).
Physicians—Drs. Ringer, F.R.S., H. C. Bastian, F.R.S., F. T. Roberts, G. V. Poore, T. Barlow, J. R. Bradford, F.R.S.
Obstetric Physician—Dr. H. R. Spencer.
Physician to Skin Department—Dr. H. R. Crocker.
Assistant Physician—Dr. S. H. C. Martin.
Consulting Surgeons—Sir H. Thompson, M.B., F.R.C.S., Mr. S. J. Hutchinson (Dental).
Ophthalmic Surgeon—Mr. John Tweedy, F.R.C.S.
Diseases of the Ear and Throat—Mr. Pollard.
Surgeons—Mr. Christopher Heath, F.R.C.S., Mr. A. E. Barker, F.R.C.S., Mr. R. J. Godlee, M.S., M.B., B.A., Mr. Victor Horsley, M.B., B.S., F.R.S., Mr. Bilton Pollard, B.S.
Assistant Obstetric Physician—Dr. G. F. Blacker.
Assistant Ophthalmic Surgeon—
Dental Surgeon—Mr. S. Spokes.
Assist. Professor of Clinical Medicine—Dr. Bradford
Assistant Professors of Clinical Surgery—Mr. B. Pollard, and Mr. Raymond Johnson, M.B., B.S.
Resident Medical Officer—Mr. Hunt.
Teacher of Pharmacy—Mr. W. Elborne, B.A.
Surgical Registrar—Mr. Douglas Drew, M.D., B.S., F.R.C.S.

Medical Clinical Lectures by Dr. Bastian, Dr. Roberts, Dr Spencer, Dr. Barlow, and Dr. Poore, also by Dr. Ringer, Holme Professor of Clinical Medicine, whose special duty it is to train the pupils in the practical study of disease, and who gives a series of lessons and examinations on the physical phenomena, diagnosis, and treatment of disease to classes consisting of a limited number and meeting at separate hours. Dr. Bradford and Dr. Martin also give special instruction in the method of physical diagnosis and of clinical observation to classes of students constituted for this purpose.

Surgical Clinical Lectures by Mr. Heath, Holme Professor of Clinical Surgery, Mr. Barker, Mr. Godlee, and Mr. Horsley. The Holme Professor of Clinical Surgery will once a week give a Lecture, and hold a Clinical Examination. The Assistant Professors of Clinical Surgery will also hold Examinations of the Senior Students throughout the year, and during the Summer months will instruct the Second Year's Students in the observation and examination of patients twice a week, as required by the Royal College of Surgeons.

Lectures on Ophthalmic Cases by Mr. John Tweedy.

PRACTICAL PHARMACY TEACHER.—Mr. W. Elborne, B.A.

SCHOLARSHIPS, EXHIBITIONS, and PRIZES of the value of £800 are awarded annually.

PRIZES.—In most of the classes Gold and Silver Medals for excellence in the examinations at the close of the courses.—Liston Gold Medal for Clinical Surgery.—Dr. Fellowes' Medals for Clinical Medicine, two gold and two silver.—Filliter Exhibition for proficiency in Pathological Anatomy, £30.—An Atkinson-Morley Scholarship for the promotion of the study of Surgery, £45 per annum, tenable for three years.—Sharpey Physiological Scholarship for proficiency in Biological Science, about £105.—Alexander Bruce Gold Medal for proficiency in Pathology and Surgery.—Cluff Memorial Prize for proficiency in Anatomy, Physiology, and Chemistry.—Erichsen Prize for Operative Surgery.—Atchison Scholarship, about £55 per anum, tenable for two years.

ENTRANCE SCHOLARSHIPS.—One Scholarship, value 131 guineas, and two Scholarships, value 55 guineas each, are offered for competition annually at the beginning of every Winter Session to gentlemen who are about to commence their first winter's attendance in a Medical school. The subjects of the Examination are those of the Preliminary Scientific Examination of the University of London.

RESIDENCE OF STUDENTS.—Some Members of the Medical Staff receive students to reside with them, and in the Office of the College there is kept a register of persons who receive boarders into their families. Among these are several medical gentlemen. The register affords information as to terms and other particulars.

Prospectuses and copies of the Regulations relating to the various Scholarships, Exhibitions, and Prizes, may be obtained free at the Office of the College.

A. E. BARKER, F.R.C.S., *Dean of the Faculty.*
October, 1896. J. M. HORSBURGH, M.A., *Secretary.*

Prospectuses of the Classes of the Faculties of Arts and Laws and of Science, of the Fine Arts Department, and of the School, may be obtained free on application at the College. The Calendar for Session 1896-97 may be obtained from the Office of the College. Price 2s. 6d.

ST. MUNGO'S COLLEGE
AND
GLASGOW ROYAL INFIRMARY

FACULTY OF MEDICINE.

The Winter Session was opened on Wednesday, October 21st, 1896, when an Introductory Address was given by Prof. FRANCIS H. NAPIER.

WINTER SESSION.

Zoology—Malcolm Laurie, D.Sc., B.A., F.R.S.E., F.L.S.
Chemistry—T. Rhymer Marshall, D.Sc.
Anatomy—R. T. Kent, F.R.C.S.; and Demonstrators.
Physiology—John Barlow, M.D., F.R.C.S.
Surgery—H. E. Clark, M.R.C.S.
Clinical Surgery—David N. Knox, M.A., M.B.
Medicine—Alex. Robertson, M.D.
Clinical Medicine—D. C. McVail, M.B.
Materia Medica—John Dougall, M.D.
Diseases of Throat & Nose—Robt. Fullerton, M.D.
Pathology—Chas. Workman, M.D., F.F.P.S.G.
Gynæcology—J. K. Kelly, M.D.
Ophthalmology—F. H. Napier, M.B., B.S., F.R.C.S.
Public Health—John Glaister, M.D., D.P.H.Camb. / John C. McVail, M.D., D.P.H.Camb.

SUMMER SESSION.

Botany—James Swanson, M.A., M.B., C.M.
Pract. Chemistry—T. Rhymer Marshall, D.Sc.
Anatomy—R. T. Kent, F.R.C.S., and Demonstrators.
Pract. Physiology—J. Barlow, M.D., F.R.C.S.
Operative Surgery—James Whitson, M.D.
Aural Surgery—J. K. Love, M.D.
Mental Diseases—A. C. Clark, M.D.
Pract. Pathology—Charles Workman, M.D., F.F.P.S.G.
Midwifery—James Stirton, M.D.
Forensic Medicine—John Glaister, M.D.
Clinical Surgery—David N. Knox, M.A., M.B.
Clinical Medicine—D. C. McVail, M.B.
Surg. Dis. of Children—J. A. Adams, M.D.
Dermatology—Alex. Morton, M.A., M.D.
Public Health—John Glaister, M.D., D.P.H.Camb. / John C. McVail, M.D., D.P.H.Camb.
Bacteriology—David McCrorie, L.R.C.P. and S.E., L.F.P.S.G.

FEES.—*College Fees* for the first year, including Summer and Winter Sessions, admitting to all the classes of that year, exclusive of Elementary Physics, £15 15s.; Second year, £15 15s.; Third year, £10 10s.; Fourth year, £5 5s.; for any Curriculum Class taken singly (except the following), £2 2s.; Anatomy, including Practical Anatomy, £4 4s.; Pathology, £4 4s.; Zoology, £4 4s.; Botany, £3 3s.

Hospital Fees.—£21, payable in two instalments of £10 10s. the first year and £10 10s. the second year; afterwards free. Students desiring hospital practice for a shorter period as follows:—For six months, £6 6s; For three months, £4 4s.

Prizes are awarded in all the Qualifying Classes at the end of each Session.

The classes in the Faculty of Law are designed to furnish a full Scottish Legal education.

ROYAL INFIRMARY STAFF.

Physicians—Dr. Robertson, Dr. McVail, Dr. Dougall, Dr. Middleton, Dr. J. Lindsay Steven.
Surgeons—Dr. Clark, Dr. Knox, Dr. Barlow, Dr. Adams, Dr. Newman, Dr. McLennan, Dr. Pringle,
Gynæcologists—Dr. J. K. Kelly and Dr. G. Balfour Marshall.
Aural Surgeon—Dr. Love. [burn.
Hon. Consulting Dental Surgeon—Dr. Wood-
Dental Surgeon—Mr. Howard Gray.
Assist. Physicians—Dr. Dunlop, Dr. Scott, Dr. Workman, Dr. Monro, Dr. Boyd, Dr. Allan
Extra Assistant Physicians—Dr. W. Hunter, Dr. McKenzie Anderson.
Assistant Surgeons—Dr. Dewar, Dr. Rutherford, Dr. Thomson, Dr. Duffus, Dr. McGregor, Dr. Luke.
Extra Assistant Surgeons—Mr. Kent, Dr. P. Paterson.
Vaccinator—Dr. R. H. Henderson.
Pathologist—Dr. Workman.
Histological Assistant to Pathologist—Dr. McCrorie.
Diseases of Throat and Nose—Dr. John MacIntyre, Dr. Fullerton.
Diseases of the Skin—Dr. Morton.
Ophthalmic Surgeon—Dr. Napier.
Electrician—Dr. MacIntyre.

The hour of visit for Physicians and Surgeons is 9 A.M. All the Physicians and Surgeons give Clinical Instruction and Lectures. The regular operating days are Wednesdays and Saturdays.

The valuable Pathological Museum is open to all Students who desire to examine the preparations.

There are Five House-Physicians and Seven House-Surgeons who are Resident. These appointments are free, and open to all Registered Medical Practitioners. Dressers to the Surgical Wards, and Clerks to the Medical Wards, Dispensary, and Pathological Room are appointed without fee from the Students.

Out-Patients are prescribed for at the Dispensary of the Infirmary daily at 2 P.M., and Vaccination is performed on Mondays and Thursdays at 12 noon.

The Hospital contains, including the Ophthalmic Department, over 600 Beds. Special Wards and Beds are reserved for the Treatment of Venereal Diseases in Males, Diseases peculiar to Women, Diseases of the Ear, and of the Throat, in addition to those set apart for the ordinary Medical and Surgical Patients. Cliniques on Special Subjects at the Dispensary, twice weekly.

The Curriculum of this College will qualify for the Conjoint Examination of the Royal Colleges of Physicians and Surgeons of England, for the Royal Colleges in Edinburgh, the Glasgow Faculty, and the Royal Colleges in Ireland, and for the Universities, in accordance with their regulations.

See Prospectuses, which can be obtained from Dr. THOMAS, Superintendent of the Hospital, from Mr. HENRY LAMOND, 98, West Regent Street, Glasgow, Secretary of the College, and from Professor R. T. KENT, 86, Castle Street, Glasgow, Dean of the Medical Faculty, who will also furnish further particulars if required.

UNIVERSITY of EDINBURGH.

Principal—Sir WILLIAM MUIR, K.C.S.I., D.C.L., LL.D., Ph.D.

The **Winter Session** opens about the middle of October and closes about the end of March; the **Summer Session** opens at the beginning of May and closes about the end of July.

FACULTY OF MEDICINE.

Dean—Professor THOMAS R. FRASER, M.D., LL.D., F.R.S.

The Faculty embraces twelve Chairs and seven Lectureships; and attached to these Chairs there are about thirty Assistants and Demonstrators. Instruction is given in all the main branches of Medical Science, viz.:—

PROFESSORS.

CHEMISTRY—Alex. Crum Brown, M.D., D.Sc., LL.D. NATURAL HISTORY—J. Cossar Ewart, M.D. BOTANY—Isaac Bayley Balfour, M.D., D.Sc. ANATOMY—Sir William Turner, M.B., D.C.L., LL.D. PHYSIOLOGY—William Rutherford, M.D. PATHOLOGY—William S. Greenfield, M.D. MATERIA MEDICA—T. R. Fraser, M.D., LL.D. MEDICINE—Sir T. Grainger Stewart, M.D. SURGERY—John Chiene, M.D. MIDWIFERY—Alexander Russell Simpson, M.D. FORENSIC MEDICINE—Sir D. Maclagan, M.D., LL.D. CLINICAL SURGERY—Thomas Annandale, M.D. CLINICAL MEDICINE—Professors Sir T. Grainger Stewart, Fraser, Greenfield, and Simpson (on Diseases of Women).

UNIVERSITY LECTURERS.

MENTAL DISEASES—T. S. Clouston, M.D. DISEASES OF THE EYE—G. A. Berry, M.B. CLINICAL INSTRUCTION ON DISEASES OF CHILDREN—J. Carmichael, M.D., & J. Playfair, M.D. EMBRYOLOGY AND VERTEBRATE ZOOLOGY—J. Beard, D.Sc. REGIONAL ANATOMY—D. Hepburn, M.D. EXPERIMENTAL PHARMACOLOGY—W. C. Sillar, M.B., B.Sc. PATHOLOGICAL BACTERIOLOGY—R. Muir, M.D.

Practical Instruction is afforded in Laboratories furnished with the necessary appliances, and in Tutorial and Practical Classes in connection with all the above Chairs, and under the superintendence of the Professors, and opportunities are afforded to Students and Graduates to extend their practical knowledge and engage in original research.

Four Degrees in Medicine and Surgery are conferred by the University of Edinburgh, viz., Bachelor of Medicine (M.B.), Bachelor of Surgery (Ch. B.), Doctor of Medicine (M.D.), and Master of Surgery (Ch.M.); and the University may also confer Diplomas in Special Branches of Medical and Surgical Practice on Graduates in Medicine and Surgery of the University.

The minimum total amount of Class Fees for M.B. and Ch.B., including Hospital Fee (£12) is about £115, and the Matriculation and Examination Fees amount to £2 8s. An additional Fee of £10 10s. is payable by those who proceed to M.D., and £10 10s. by those who proceed to Ch.M.

The annual value of the Bursaries, Prizes, Scholarships, and Fellowships in the Faculty of Medicine amounts to about £3,250, and that of the other Bursaries, etc., open to Students of Medicine, amounts to about £1,160.

Instruction is also given in Public Health, and the Degrees of B.Sc. and D.Sc. in Public Health are conferred by the University.

Residences for Students, Graduates, and others are situated within easy reach of the University. Board and lodging on moderate terms.

Further information as to Matriculation, the Curricula of Study for Degrees, etc., may be obtained from the Clerk of Senatus, or the Dean of the Faculty of Medicine; and full details are given in the University Calendar, published by James Thin, 55 South Bridge.

By Authority of the Senatus,

JOHN KIRKPATRICK, *Secretary of Senatus.*

November, 1896.

Royal College of Surgeons of Edinburgh.

FOUNDED 1505.

Copies of the Regulations for the Fellowship, Licence, and Licence in Dental Surgery, with dates of Examinations, Curricula, etc., for the year 1896-7, are now ready, and may be had on application to

JAMES ROBERTSON, Solicitor, 1, GEORGE SQUARE, EDINBURGH,
Clerk to the College.

University of Durham.

COLLEGE OF MEDICINE, NEWCASTLE-UPON-TYNE.

DEGREES IN MEDICINE, SURGERY, AND HYGIENE.—Six Degrees and one Diploma, are conferred by the University of Durham—viz., the Degrees of Bachelor in Medicine, Doctor in Medicine, Bachelor in Surgery, and Master in Surgery, Bachelor in Hygiene, and Doctor in Hygiene; and Diploma in Public Health.

Attendance at the University of Durham College of Medicine during one of the five years of professional study, or subsequently to qualification elsewhere, is required as part of the curriculum for the Degrees, except in the case of Practitioners of more than fifteen years' standing, who have attained the age of forty years, who can obtain the Degree after examination only.

The first three Examinations for the Degree of M.B. may be passed prior to the commencement of attendance at Newcastle.

A candidate who has a recognized qualification, or who has passed the First Examination of the Conjoint Board in England of the Royal College of Physicians of London and the Royal College of Surgeons of England, will be exempt from the First Examination of the University of Durham, except in the subjects of Chemistry and Physics.

A candidate who has passed the First and Second Examinations of the University will be exempt from the First and Second Examinations of the Conjoint Board in England, and will be entitled to present himself for the Final Examination of the Board on the completion of the necessary curriculum.

The Extra Arts Examination must be passed previously to the candidate's entry for his Final Examination for the Degree.

All information, together with Examination Papers, &c., is given in the Calendar of the University of Durham College of Medicine, Newcastle-upon-Tyne, or may be obtained from the Secretary at the College.

Scholarships, &c.—A University of Durham Scholarship, value £100, for proficiency in Arts awarded annually to full Students in their first year only. The Dickinson Scholarship—value, the interest of £400, and a Gold Medal—for Medicine, Surgery, Midwifery, and Pathology. The Tulloch Scholarship—value, the interest of £400—for Anatomy, Physiology, and Chemistry. The Charlton Scholarship—value, the interest of £700—for Medicine. The Gibb Scholarship—value, the interest of £500—for Pathology. The Luke Armstrong Scholarship—interest on £680—awarded to the Candidate who obtains highest marks in the honours division in the final examination in April and September in each year. The Stephen Scott Scholarship—interest on £1000—for promoting the study of Surgery and allied subjects. Heath Scholarship—the late George Yeoman Heath, M.D., M.B., D.C.L., F.R.C.S., President of the University of Durham College of Medicine, has bequeathed the sum of £4000 to found a Scholarship in Surgery, the interest to be awarded every second year. Gibson Prize, value, the interest of £225, for Midwifery and Diseases of Women and Children. The Goyder Memorial Scholarship (at the Infirmary)—value, the interest of £325—for Clinical Medicine and Clinical Surgery. At the end of each Session a Prize of Books and Honours Certificates are awarded in each of the regular Classes. Assistant Demonstrators of Anatomy, Prosectors, and Assistant Physiologists are elected yearly. Pathological Assistants, Assistants to the Dental Surgeon, Assistants in the Eye Department, Clinical Clerks, and Dressers are appointed every three months.

The Royal Infirmary contains 280 beds. Clinical Lectures are delivered by the Physicians and Surgeons in rotation. Pathological Demonstrations are given as opportunity offers by the Pathologist. Practical Midwifery can be studied at the Newcastle Lying-in-Hospital, where there is an Out-door Practice of about 500 cases annually.

FEES.

(a) A Composition Ticket for Lectures at the College may be obtained—

I. By payment of 70 guineas on entrance.

II. By payment of 45 guineas at the commencement of the First Year, and 35 guineas at the commencement of the Second Year.

III. By three annual instalments of 35, 30, and 20 guineas respectively, at the commencement of the Sessional year.

(b) Fees for attendance on Hospital Practice:—

For 3 months' Med. & Surg. Practice, £5 5s. | For 1 year's Med. & Surg. Practice, £12 12s.
" 6 " " " £8 8s. | " perpetual " " £25 25s.

Or by three instalments at the commencement of the Sessional year—viz., First year, 12 guineas; Second year, 10 guineas; Third year, 6 guineas. Or by two instalments—viz., First year, 14 guineas; Second year, 12 guineas.

In addition to the above fees, the Committee of the Royal Infirmary require the payment of 2 guineas yearly up to three years from every Student attending the Infirmary for a year or part of a year. After three years of attendance, such payment will be no longer necessary.

(c) Single Courses of Lecture, 5 guineas.

Fees for Lectures, &c., at the College must be paid to the Secretary, and Fees for Hospital Practice to the House-Physician at the time of entry.

Further particulars may be obtained from the Sec., PROF. HOWDEN, at the College.

University College, BRISTOL.

FACULTY OF MEDICINE.

The Winter Session commences in October and the Summer Session in May.

Courses of Lectures:

Medicine—Professors, E. MARKHAM SKERRITT, M.D. Lond., B.S., B.A., F.R.C.P., and J. E. SHAW, M.B., C.M. Edin.
Surgery—Professor, J. GREIG SMITH, M.A., M.B., C.M., F.R.S.E.
Anatomy—Professor, EDWARD FAWCETT, M.B., C.M. Edin.
Practical Anatomy—Demonstrator, J. PAUL BUSH, M.R.C.S.
Physiology—Professor, G. MUNRO SMITH, M.R.C.S., L.R.C.P.
Practical Physiology and Histology—Lecturer, F. H. EDGEWORTH, B.A., M.B., B.C. Cantab., B.Sc. Lond.
Chemistry—Lecturer, Prof. SYDNEY YOUNG, D.Sc., F.R.S.
Public Health—Lecturer, D. S. DAVIES, M.D. Lond., D.P.H. Cantab., M.O.H.
Midwifery and Diseases of Women—Professor, A. E. AUST LAWRENCE, M.D.
Medical Jurisprudence—Lecturers, R. EAGER, M.D. Lond., and A. J. HARRISON, M.B. Lond.
Pathology and Morbid Anatomy—Professor, J. MICHELL CLARKE, M.A., M.D. Cantab., F.R.C.P.
Operative Surgery—Lecturer, C. F. PICKERING, F.R.C.S.
Practical Medicine—Lecturer, J. E. SHAW, M.B., C.M.
Practical Surgery—Lecturer, A. W. PRICHARD, M.R.C.S.
Practical Midwifery—Lecturer, W. C. SWAYNE, M.D. Lond.
Materia Medica and Practical Pharmacy } Lecturer, A. B. PROWSE, M.D. Lond., F.R.C.S.
Pharmacology and Therapeutics }
Biology—Lecturers, Prof. C. LLOYD MORGAN and S. H. REYNOLDS, M.A.
Practical Chemistry—Lecturer, Prof. SYDNEY YOUNG, D.Sc., F.R.S.
Practical Bacteriology—Lecturer, D. S. DAVIES, M.D. Lond., D.P.H. Cantab., M.O.H.
Comparative Anatomy—Lecturer, Prof. C. LLOYD MORGAN.
Dental Anatomy and Physiology—Lecturer, Prof. G. MUNRO SMITH, M.R.C.S., L.R.C.P.
Dental Surgery—Lecturer, W. R. ACKLAND, M.R.C.S., L.D.S.
Dental Mechanics } Lecturer, C. A. HAYMAN, M.D., L.D.S.
Dental Metallurgy }
Medical Tutor—C. A. BROUGH, LL.B. Lond.; M.B., B.S. Durham.
Physiological Assistants—P. G. STOCK and S. R. WILLIAMS.

COMPOSITION FEE FOR LECTURES, 65 guineas or 55 guineas.

SPECIAL SIX MONTHS' COURSE FOR DIPLOMA IN PUBLIC HEALTH.

1.—*Lectures on Public Health*—D. S. DAVIES, M.D. Lond., D.P.H. Cantab., M.O.H.
2.—*Laboratory Course of Hygienic Chemistry and Bacteriology*—F. W. STODDART, F.I.C., F.C.S.
3.—*Demonstrations on the Various Acts, Orders, By-Laws, &c.*—J. C. HEAVEN, M.R.C.S., D.P.H. Lond.
4.—*Practical Out-door Sanitary Work*—D. S. DAVIES, M.D. Lond., D.P.H., M.O.H.

FEE for the Entire Course, 20 guineas.

An important Medical Library exists in the College, consisting of the combined libraries of the Faculty of Medicine, the Bristol Medico-Chirurgical Society, the Bristol Royal Infirmary, and the Bristol General Hospital. Students have the privilege of using this Library.

Honorary Librarian, L. M. GRIFFITHS, M.R.C.S.

HOSPITAL PRACTICE may be attended either at the Bristol Royal Infirmary or at the Bristol General Hospital.

FEVER HOSPITAL PRACTICE at the Hospitals for Infectious Diseases, of the Sanitary Authority of the Corporation of Bristol; and LUNATIC ASYLUM DEMONSTRATIONS at the City and County Lunatic Asylum, Stapleton.

FEES (including Clinical Lectures)—Infirmary: Perpetual Medical and Surgical Practice, 20 guineas each, or in one payment, 35 guineas. Hospital: Perpetual Medical and Surgical Practice, £20 each, or in one payment, 35 guineas. Fever Hospital Practice, and Lunatic Asylum Demonstrations, 3 guineas each.

SCHOLARSHIPS AND PRIZES.—Numerous valuable Scholarships and Prizes are offered by the Faculty of Medicine, and by the Infirmary and the Hospital.

For Prospectuses and Particulars apply to

E. MARKHAM SKERRITT, M.D., *Dean.*

Guy's Hospital Medical School.

The Hospital contains 695 Beds, of which 500 are in constant occupation.

Special Classes are held for Students preparing for the Examinations of the University of London, and other Higher Examinations.

APPOINTMENTS.

All Hospital Appointments are made strictly in accordance with the merits of the Candidates, and without extra payment.

ENTRANCE SCHOLARSHIPS, Yearly in September.

Two Open Scholarships in Arts, one of the value of £100 open to candidates under 20 years of age, and one of £50, open to candidates under 25 years of age. Two Open Scholarships in Science, one of the value of £150, and another of £60, open to Candidates under 25 years of age.

PRIZES AND SCHOLARSHIPS

Are awarded to Students in their various years, amounting in the aggregate to more than £650.

DENTAL SCHOOL.

A recognised Dental School is attached to the Hospital, which affords to Students all the instruction required for a Licence in Dental Surgery.

COLLEGE.

The Residential College accommodates about 50 Students in addition to the Resident Staff of the Hospital. It contains a large Dining Hall, Reading Room, Library, and Gymnasium for the use of the Students' Club.

For Prospectus and further information, apply to the Dean, Dr. SHAW, Guy's Hospital, LONDON BRIDGE, S.E.

SAMARITAN FREE HOSPITAL
FOR WOMEN AND CHILDREN.
MARYLEBONE ROAD, LONDON, N.W.

Bankers—Sir SAMUEL SCOTT, Bart., and CO., 1, Cavendish Square.

THIS Hospital is for the reception of **Poor** Women afflicted with diseases **peculiar** to their sex. It has become world-famous for the treatment of internal tumours. Poor Women suffering from such diseases, and Children from all diseases, treated in the Out Department. No Payment demanded for Medicine. No Governor's Letter required by either **In-** or **Out-Patients,** the admission being **Entirely Free.**

OPERATION DAYS: *Physicians*—Monday, 2 p.m. Other days, 9.30 or 2.30
Surgeons—Wednesday, 2.30 p.m. ,, ,, ,,

Duly qualified Practitioners only are allowed to witness operations.

All applications for admission to be addressed to the Secretary; and when the patient is unable by illness or distance to apply personally, a printed form will be furnished, which must be returned to the Secretary, duly filled up.

Out-Patients' Entrance—171, MARYLEBONE ROAD.

Attendances daily (Sundays excepted) from 12.0 to 2.0 p.m.

Qualification of Governors—Annual Subscrip., £2 2s. Life Subscrip., £21.

Contributions Much Needed. **GEORGE SCUDAMORE,** *Secretary.*

ST. PETER'S HOSPITAL

For Stone, Stricture, & Urinary Diseases, &c.

ESTABLISHED 1860.

HENRIETTA ST., COVENT GARDEN, W.C.

President—Rt. Hon. The Earl of Dunraven and Mount Earl, K.P.
Treasurer—F. A. Bevan, Esq.

St. Peter's Hospital is intended for Persons of both Sexes suffering from Stone in the Bladder and other Diseases of the Genito-Urinary Organs, and contains 24 Beds, and 2 Private Wards for Paying Patients.

The number of Patients treated during the last twelve months was **448** In-Patients, and **4,637** New Out-Patients, the latter being seen on Monday at 2 and 5; Tuesday at 2; Wednesday at 5; Thursday at 2; Friday at 2, Women and Children only; Saturday at 4.

A Donation of Ten Guineas constitutes a Life Governor; a Subscription of One Guinea an Annual Governor. Subscriptions and Donations will be thankfully received by Messrs. Barclay & Co., 54 Lombard Street, E.C.; Messrs. Hoare & Co., 37, Fleet Street, E.C.; or by

IRWIN H. BEATTIE, *Secretary.*

The MIDDLESEX HOSPITAL MEDICAL SCHOOL.

Hospital Staff and Lecturers.—Consulting Physician: Dr. H. Thompson. Physicians: Dr. Cayley, Dr. Conpland, Dr. Douglas Powell, Dr. Fowler. Obstetric Physician: Dr. W. Duncan. Assistant Physicians: Dr. C. Y. Bisa, Dr. W. Pasteur, Dr. W. E. Wynter, Dr. A. F. Voelcker. Consulting Physician to Skin Department: Dr. Robert Liveing. Physician to Skin Department: Dr. Pringle. Assistant Obstetric Physician: Dr. R. Boxall. Consulting Surgeons: Mr. Nunn and Mr. Lawson. Surgeons: Mr. Henry Morris, Mr. Andrew Clark, Mr. Gould. Assistant Surgeons: Mr. J. B. Sutton, Mr. L. Hudson, Mr. Murray. Ophthalmic Surgeon: Mr. Wm. Lang. Aural Surgeons: Mr. L. Hudson. Consulting Dental Surgeon: Mr. Turner. Dental Surgeon: Mr. Storer Bennett. Asaistant Dental Surgeon: Mr. Wm. Hern. Other Lecturers: Dr. Plimpton, Dr. Mickle, Dr. Young, Dr. Robinson.

SIXTEEN RESIDENT CLINICAL APPOINTMENTS are open to Students annually.

ALL CLERKSHIPS and DRESSERSHIPS are awarded without fee.

TWO BRODERIP SCHOLARSHIPS, of the annual value of £30 and £20 respectively, each tenable for two years, are awarded every year for proficiency in Clinical Knowledge.

THE MURRAY SCHOLARSHIP, founded in connection with the University of Aberdeen, is awarded every third year to a Student of the Middlesex Hospital.

The GOVERNORS' PRIZE OF TWENTY GUINEAS is given annually to the Student who shall have most distinguished himself in Clinical work in the Out-patient Department in his final year.

The HETLEY PRIZE, value £25, is awarded annually for proficiency in Clinical Medicine, Surgery, and Obstetrics.

The LYELL MEDAL, value £5 5s., is awarded annually to second year's Students.

PRIZES.—A Prize in Elementary Anatomy and Physiology, value £5 5s., will be given to the Student who, at the end of his first Winter Session, shall pass the best written and practical examination.

An Exhibition of the value of £10 10s. will be given at the end of his second Winter Session to the Student who shall pass the best written and practical examination in Anatomy and Physiology.

Middlesex Hospital Entrance Scholarships.—Entrance Scholarships in Classics, Mathematics and Natural Science are offered for competition at the commencement of the Winter Session. Full particulars may be obtained on application to the Dean. Successful candidates are required to become general students of the School.

SCHOLARSHIP IN ANATOMY AND PHYSIOLOGY.—An Annual Scholarship of the value of £80 a year, tenable for two years, is open to Students of the Universities of Oxford and Cambridge who have completed their Anatomical and Physiological Studies. *Subjects:* Anatomy and Physiology, including Histology. Examination to take place in October.

THE TUTORS *assist all students, especially those who are preparing for examination, without extra fee; thus the necessity for obtaining private instruction is obviated.*

MEDICAL and SURGICAL REGISTRAR, RESIDENT MEDICAL OFFICER, DEMONSTRATORS of ANATOMY.—These valuable appointments are open to qualified men as they become vacant.

For further information apply to the Dean or the Resident Medical Officer, at the Hospital.

SIDNEY COUPLAND, *Dean.*

Royal Colleges of Physicians and Surgeons of Edinburgh
AND
Faculty of Physicians and Surgeons of Glasgow.

The Professional Examination Periods for the Triple Qualification of this Board for 1896-97 will commence as follows:—

IN EDINBURGH.—1897. JAN. 13th. MAR. 31st. JULY 7th.
IN GLASGOW.—1897. APRIL 12th. JULY 12th.

Copies of the Regulations, containing all necessary information regarding Curriculum of Study, &c., for Licence and D.P.H., may be had on application to JAMES ROBERTSON, Solicitor, 1, George Square, Edinburgh; or to ALEXANDER DUNCAN, B.A., Faculty Hall, 242, St. Vincent St., Glasgow.

Applicants will please state whether they commenced Medical Study *before* or *after* January 1st, 1892.

National Orthopædic Hospital
(FOR THE DEFORMED),
234, GREAT PORTLAND ST., REGENT'S PARK, W.

President—HIS GRACE THE DUKE OF MARLBOROUGH.
Treasurer—SIR HORACE FARQUHAR, M.P., L.C.C.

Crippled *Children* and *Adults* are here relieved and cured, and many Patients, who were well-nigh hopeless Cripples, cured by the surgical skill and timely aid of this Charity, are now earning a livelihood. **The Committee of Management very earnestly Appeal for HELP.**

A Subscription of £1 1s. entitles to Five Out-Patient Letters, and £3 3s. per annum to One Limited Free Bed and Ten Out-Patient Letters.

Cheques and P.O. Orders will be thankfully received by the Bankers, Sir S. SCOTT, Bart., & Co., 1, Cavendish Square, W., or by the Secretary, Mr. H. J. TRESIDDER, at the Hospital, 234, Great Portland Street, W., from whom all information can be obtained.

ST. LUKE'S HOSPITAL,
LONDON, E.C.

ESTABLISHED 1751.

THIS Hospital was established for the TREATMENT of MENTAL DISEASES of the Middle Classes. Preference is given to acute cases, and these are admitted either gratuitously or on payment of a weekly sum varying from 14s. to 30s., according to the circumstances of each. Patients are eligible for admission from any part of the United Kingdom. Forms of application may be had from, and enquiries addressed to, the Secretary, at the Hospital.

The CONVALESCENT ESTABLISHMENT in connection with the Hospital is at ST. LAWRENCE, near RAMSGATE

W. H. BAIRD, *Secretary.*

YORKSHIRE COLLEGE, LEEDS—Medical Department.

HOSPITAL STAFF.

Consulting Physicians—T. Clifford Allbutt, M.A., M.D., F.R.S., F.R.C.P.; J. E. Eddison, M.D.
Consulting Surgeons—C. G. Wheelhouse, F.R.C.S. T. Pridgin Teale, M.A., M.B., F.R.S., F.R.C.S.; T. H. Jessop, F.R.C.S.; E. Atkinson, M.R.C.S., F.L.S.
Physicians—T. Churton, M.D.; A. G. Barrs, M.D., F.R.C.P.; C. M. Chadwick, M.A., M.D., F.R.C.P.
Surgeons—A. W. Mayo Robson, F.R.C.S.; E. Ward, M.A., M.B., B.C.; W. H. Brown, F.R.C.S.I., M.R.C.S.; Harry Littlewood, F.R.C.S.
Ophthalmic and Aural Surgeons—John A. Nunneley, M.B.; H. Bendelack Hewetson, M.R.C.S.
Obstetric Physician—James Braithwaite, M.D.
Assistant Physicians—T. W. Griffith, M.D., C.M.; E. F. Trevelyan, M.D., B.Sc.
Assistant Surgeon—R. L. Knaggs, M.A., M.C., F.R.C.S.
Assistant Ophthalmic and Aural Surgeon—H. Secker Walker, F.R.C.S.
Dental Surgeon—T. S. Carter, L.D.S.

PROFESSORS, LECTURERS AND DEMONSTRATORS.

Medicine—Prof. J. E. Eddison, M.D., Cons. Phys. Leeds Infirmary; T. Churton, M.D., Senior Phys. Leeds Infirmary. Surgery—Prof. A. W. M. Robson, F.R.C.S., Surg. Leeds Infirmary. Practical Surgery—E. Ward, M.A., M.B., B.C., Surg. Leeds Infirmary. Descriptive, Applied, and Practical Anatomy—Prof. T. W. Griffith, M.D., C.M., Assist. Phys. Leeds Infirmary; Phys. to Leeds Public Dispensary. Lecturer on Osteology—Edmund Robinson, M.R.C.S. Practical Anatomy—Demonstrator: J. K. Jamieson, M.B., C.M. Hon. Demonstrators: G. L. Wells, M.B., B.S., F.R.C.S., Surg. Leeds Public Dispensary; H. A. Smith, L.R.C.P., M.R.C.S.; B. G. A. Moynihan, M.B., M.S., F.R.C.S. Physiology, Practical Physiology and Histology—Prof. De Burgh Birch, M.D., C.M., F.R.S.E. Demonstrator: R. W. C. Shelford, B.A. Pathology and Practical Pathology—Prof. E. F. Trevelyan, M.D., B.Sc., Assist. Phys. Leeds Infirmary and Phys. Leeds Public Dispensary. Surgical Pathology—Hon. Demonstrator, H. Littlewood, F.R.C.S., Surgeon Leeds Infirmary. Midwifery—Prof. C. J. Wright, M.R.C.S., Senior Surg. Leeds Hospital for Women and Children. Hon. Demonstrator—E. O. Croft, L.R.C.P., Surg. Leeds Hospital for Women and Children. Diseases of Women and Children—J. B. Hellier, M.D., Surg. Leeds Hospital for Women and Children. Forensic Medicine—T. Scattergood, M.R.C.S., Cons. Surg. Leeds Hospital for Women and Children; C. M. Chadwick, M.A., M.D., F.R.C.P., Phys. Leeds Infirmary; Senior Phys. Leeds Public Dispensary. Demonstrator of Practical Toxicology—Julius B. Cohen, Ph.D. Materia Medica, Pharmacology, and Therapeutics—Prof. A. G. Barrs, M.D., F.R.C.P., Phys. Leeds Infirmary. Practical Pharmacy—F. W. Branson, F.I.C. Chemistry and Prac. Chemistry—Prof. A. Smithells, B.Sc. Assist. Lecturer and Demonstrator: H. Ingle, F.I.C. Biology and Comp. Anatomy—Prof. L. C. Miall, F.R.S.; Botany, J. H. Wilson, D.Sc. Physics—Prof. W. Stroud, D.Sc., M.A. Operative Surgery—E. Ward, M.A., M.B., B.C., Surg. Leeds Infirmary. Ophthalmology & Otology—H. S. Walker, F.R.C.S., Assist. Ophthalmic & Aural Surg. Leeds Infirmary. Mental Diseases—W. Bevan Lewis, L.R.C.P., M.R.C.S., Med. Director West Riding Asylum, Wakefield. Public Health—R. N. Hartley, M.B., B.S.

The Lectures & Hospital Practice qualify Students for the various Examining Boards. Students can enter for the Hospital Practice, or the Lectures, or for a Single Course of Lectures separately.

The Infirmary in which the Medical and Surgical Practice is conducted, has an average of 400 In-Patients. Senior Students are selected, according to merit, for several Resident Appointments. The Dispensary, the Fever Hospital, the Hospital for Women and Children, and the West Riding Asylum at Wakefield, are also open to Students. The Prospectus and further information may be obtained from the Registrar of the College, W. F. HUSBAND, LL.B.

Richmond, Whitworth, & Hardwicke Hospitals, Dublin.

The Session, 1896-7, commenced on Thursday, October 1, 1896. These Hospitals contain nearly 300 beds.

PHYSICIANS—Sir J. T. Banks, K.C.B., M.D., LL.D., Physician in Ordinary to the Queen in Ireland; Regius Professor of Medicine, Univ. Dublin; Member of the Senate of the Royal Univ. Ireland.
S. Gordon, M.D., ex-President College of Physicians; ex-President of the Royal Academy of Medicine.
Guy P. L'Estrange Nugent, M.D., F.R.C.P., late Examiner in Medicine, Univ. Dublin; Registrar Royal College Physicians.
Joseph O'Carroll, M.D., Examiner in Medicine, Royal University.

SURGEONS—William Thomson, F.R.C.S.; President R.C.S; Member of the Senate of the Royal Univ. Ireland: Surgeon in Ordinary to the Lord Lieutenant.
Sir Thornley Stoker, ex-President R.C.S.; Fellow and Examiner in Surgery, Royal University; Surgeon to Swift's Hospital for Lunatics.
Thomas Myles, M.D., F.R.C.S., Professor of Pathology and Examiner Royal College of Surgeons.

OPHTHALMIC SURGEON—A. H. Jacob, M.D., Oculist to the Lord Lieutenant.

Apply to W. THOMSON, F.R.C.S., Treasurer, 54, St. Stephen's Green, E.; or to Dr. NUGENT, 19, Lower Fitzwilliam Street, Dublin.

LIVERPOOL
Royal Southern Hospital

Honorary Consulting Surgeon—Mr. Robert Hamilton.
Physicians—Dr. J. Cameron, Dr. W. Carter, Dr. W. Williams.
Surgeons—Mr. H. G. Rawdon, Dr. W. Alexander, Mr. Robert Jones.
Consulting Pathologist—Professor R. W. Boyce.
Lecturer on Practical Medicine—Dr. C. J. Macalister.
Surgical Tutor—Mr. W. H. C. Davey. *Pathologist*—Dr. F. H. Barendt.
Medical Tutor and Bacteriologist—Dr. Hugh R. Jones.
Honorary Ophthalmic Surgeon—Dr. R. Williams.
Honorary Aural Surgeon—Dr. C. G. Lee. *Laryngologist*—Dr. Permewan.
Dentist—Mr. J. Royston. *House Surgeon*—Mr. J. A. Craig.
Junior House Surgeons—Mr. J. R. Thompson, Mr. W. N. Barlow.

200 Beds. Clinical Lectures given by the Physicians and Surgeons during the Winter and Summer Sessions. Clinical Clerkships and Dresserships open to all Students. Special Wards for Accidents and Diseases of Children. Rooms for a limited number of Resident Students.

Fees for Hospital Practice and Clinical Lectures—Perpetual £26 5s.; One Year, £10 10s.; Six Months, £7 7s.; Three Months, £4 4s. The practice of the Hospital is recognized by all examining Bodies.

DR. STEEVENS' HOSPITAL, DUBLIN.

FOUNDED A.D. 1720.

WITH DISTINCT WARDS for Fever and Syphilis, and an extensive Dispensary for Out-Patients.

HOSPITAL STAFF.

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Consulting Surgeons—Mr. WILMOT, Mr. E. H. BENNETT.
Physicians—Dr. H. C. TWEEDY, Dr. R. A. HAYES.
Resident Surgeon—Mr. J. BEATTY.
Surgeons—Mr. E. HAMILTON, Mr. MCCAUSLAND, Mr. SWAN.
Dental Surgeon—Mr. G. M. P. MURRAY.
Ophthalmic and Aural Surgeon—Mr J. B. STORY.
Maternity Physician—Dr. J. L. LANE.
Gynæcologist—Dr. E. H. TWEEDY.

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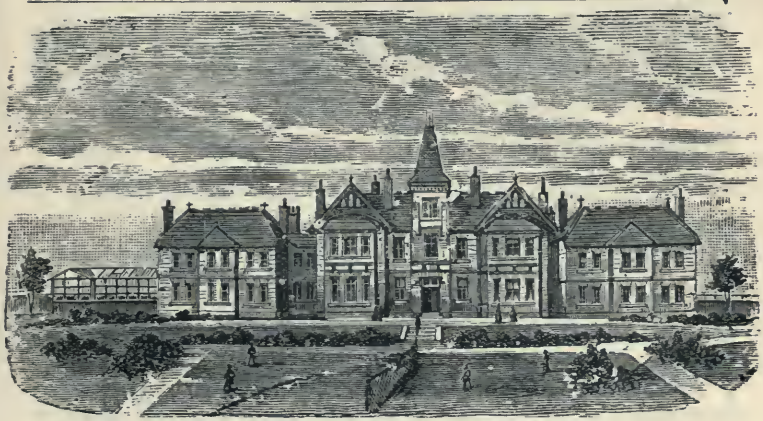

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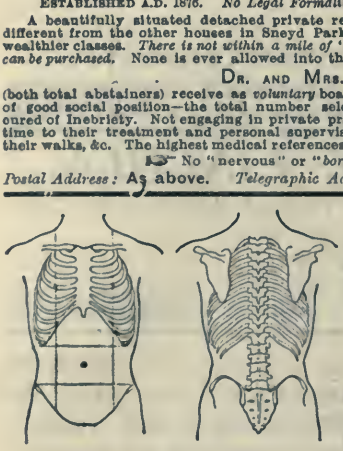

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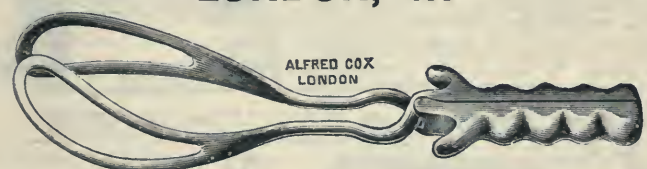

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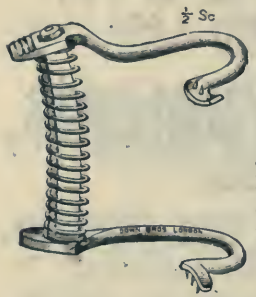

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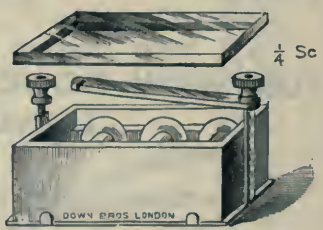

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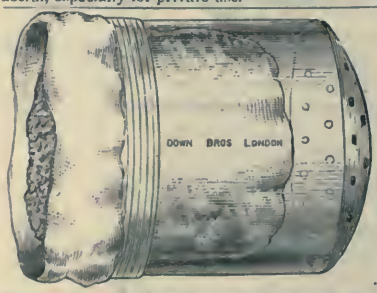

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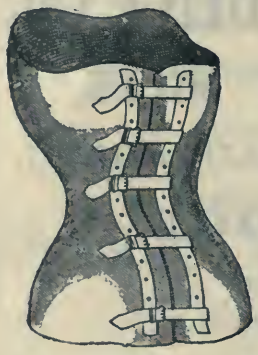

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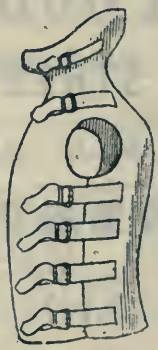

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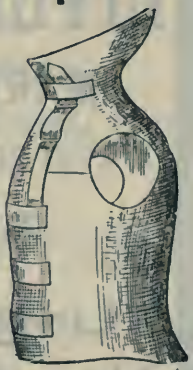

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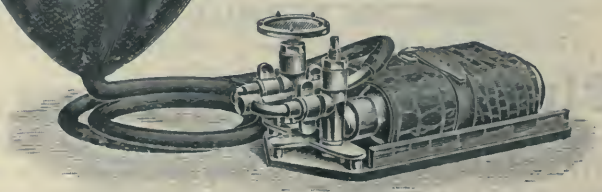

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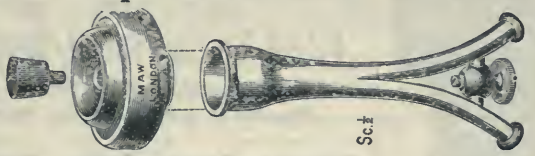

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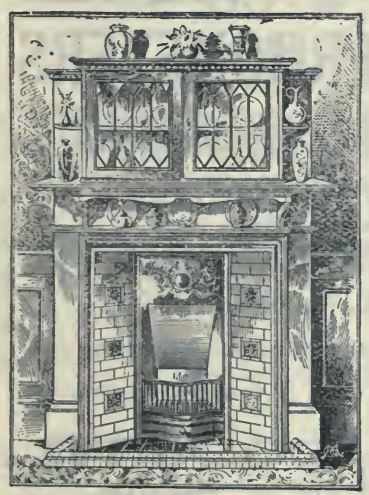

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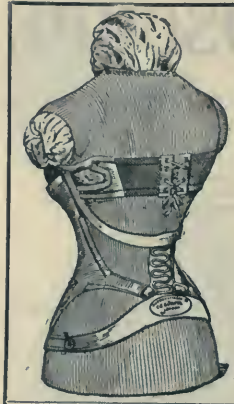

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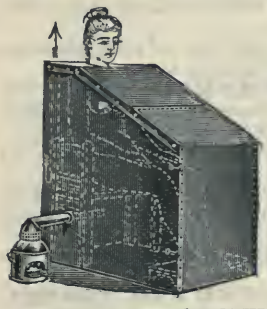

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CHINOSOL possesses a germicidal action at least forty times stronger than Carbolic Acid without exhibiting the dangerous properties of the latter. (*See* published Bacteriological Reports and Literature.)

When employing Chinosol solutions their relative strength to Carbolic Acid should always be considered, for instance—

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LACTOPEPTINE TABLETS have the same formula as LACTOPEPTINE POWDER: and Lactopeptine Powder has been a favoured prescription of the Medical Profession for more than twenty years.

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The new COFFEE AND CRESSINI BISCUITS, now widely recommended by Medical Men, are very agreeable and pleasant.

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The LOAVES can be sent through the Post, 1s. each.

Both Bread and Biscuits have now been before the Medical Profession for over 25 years with the highest results, and with the greatest satisfaction to those requiring to use them, and whose testimony (after years of trial) of the great advantage they continue to derive from them, constitute their best recommendation.

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SILVER MEDAL, INTERNATIONAL HEALTH EXHIBITION, 1884.

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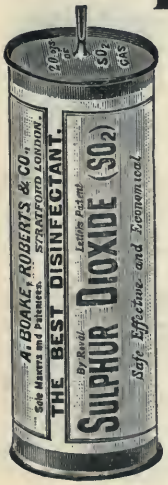

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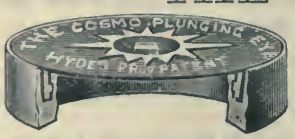

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